EIGHTIETH ANNUAL MEETING
OF THE
British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF DERMATOLOGY.

Professor W. G. SMITH, M.D., F.R.C.P., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PHYSICS AND BIO-CHEMISTRY IN RELATION TO DERMATOLOGY.

AFTER a few initial observations, the PRESIDENT said:

Upon glancing back over the proceedings of the past few years one can hardly fail to be struck with this thought: Over and above the usual run of clinical cases, demonstrations, and practical communications, it is easy to recognize the growing significance of the application of the principles and methods of two sciences which are cognate not only to our own department, but also to every branch of medical science. I refer to the science of physics and to its younger relative, bio-chemistry, for chemistry is every day becoming more closely allied to molecular physics.

Physical science has recently enriched the practice of dermatology with several highly valuable—nay, indispensable—methods of diagnosis and treatment.

I need only mention radium and radio-therapeutics, *x* rays, Finsen light, high frequency currents, cataphoresis, and lastly CO_2 snow. The therapeutic effects of radium and of *x* rays upon rodent ulcer are most likely, I think, due to alterations in the physico-chemical equilibrium of the cells and tissues exposed to their influence.

The subject of balneology closely concerns us, and science has lately turned its torchlight upon the pharmacology of mineral waters with unexpected and surprising results. The water of the King's Well in Bath has been shown by Sir William Ramsay to contain a relatively enormous amount of neon, one of the so-called inert group of gases. It exists in the atmosphere in an almost incredibly small amount, 1 or 2 parts in 100,000. Yet Ramsay has determined that there is 188 times as much neon in the gas from the King's Spring as there is in an equal volume of atmospheric air. Now it is highly improbable that any therapeutic virtues can lurk in this inactive gas. But it is quite otherwise with the unstable radio-active gas known as "radium emanation," or, as it is more conveniently termed, "niton." It is not only possible but probable that the therapeutic action of the waters of Bath and some other spas may be in part due to this wonderful gas, which is a pregnant storehouse of energy, and a tempting vista is opened up not only to speculation but also to experimental observation. It is not unlikely that allowance may have to be made for loss of radio-activity in the waters of certain springs when they have become stale and altered by transport and storage.

If we turn to bio-chemistry we find that our sphere of knowledge is notably enlarged, and our means of detecting and dealing with morbid conditions are enhanced by the recent investigations upon immunity, vaccines, and serum treatment. Once the doctrine of infective diseases was accepted, it gradually became apparent that no living organism, whether plant or animal, could long exist or withstand the attacks of the innumerable hosts of invading microbes unless the organism possessed or acquired means of self-defence. So it has come to pass that we have learned that although our foes be many yet so are our weapons of resistance and protection, but I cannot now enter upon this attractive topic.

Now all the various substances which take part in immunization are certainly colloids, in a state of solution or emulsion, and no one has yet succeeded in developing immunism by means of a crystalloid. Protoplasm, or cytoplasm, exhibits itself as a colloid "sol" of colloids and crystalloids, rather than as a "gel." Our knowledge of the chemical constitution of normal proteins, which are all colloids, is still too limited to enable us to say much about the nature of immunizing substances. Yet the experiments of F. Obermayer and E. P. Pick go to show that the "aromatic" nucleus in the antigen is of prime importance for the origin and operation of the antibody.

It seems to me beyond doubt that whatever our future views or theories may be upon these difficult subjects, we must invoke for their inner meaning and possible explanation the assistance of organic chemistry, and their scientific investigation will surely be carried on under the auspices of physics and physical chemistry.

I may here remind the Section that, at the meeting in 1904, Dr. Leslie Roberts read an instructive paper on the physico-chemical forces which influence cutaneous reactions; and he would, I am sure, agree with me in the view that greater stress might well be laid upon the physico-chemical properties of the skin. Regarded from such a standpoint, the skin may be defined as a greasy colloidal septum, not continuous, but interrupted by multitudes of fine perforations (openings of sweat and sebaceous glands), and by points of relative weakness—that is, of greater absorbing power (hair follicles). Discrepant and contradictory statements have been published by eminent physiologists in respect of the absorbing powers of the skin, a topic which necessarily interests us all. Yet, surely, the question is comparatively easy to answer. It is, I consider, satisfactorily established that for absorption to occur to any useful extent through the unbroken skin, only substances soluble in or miscible with fats can be relied on. In the current language of the day, we call such substances lipoid-soluble. As examples may be cited certain gases and vapours, especially under pressure; volatile oils; phenol, creosote; liquids such as chloroform and ether, and true fats, particularly when aided by diligent friction. There is no good evidence that a solid hydro-carbon, such as vaseline or paraffin wax, can make its way through the uninjured epidermis; circumstances are, of course, quite different when the epidermis is abraded.

Compared with the other body structures, the skin, and notably its appendages—for example, hair and nails—have very little capacity of swelling or taking up water, or substances soluble in water. Hence we must admit that the effects of mineral waters upon the skin are to be explained upon lines other than that of absorption. Leaving out of sight the secretion of sweat, the impermeability of the epidermis, so far as it is continuous, to water is evidently essential to the maintenance of the proper form of the body, and to the retention of the due amount of water within the organism.

For, if the epidermis were, like gelatine, a hydrophile structure, capable of an indefinite degree of turgor, the fluids within the body would suffice to stretch the integument, enlarge and distort its form, and impoverish the water contents of the inner organs. Conversely, a moist atmosphere—a shower of rain—might introduce an undesirable influx of water, and so our bodily configuration would too readily undergo alterations in conformity with varying meteorological conditions. The skin and its appendages can *ad*sorb a certain amount of water, but cannot *ab*sorb it; and it is just for this reason that these structures resist change so well, and we find in long-buried corpses that the skin and hair may persist for ages in but a slightly altered state.

I have used the word *adsorb*, and am tempted, before I conclude, to make a few remarks upon adsorption—a term which has lately come into general use to denote old and familiar phenomena. As everyday examples I will mention the decolorizing power of finely divided carbon, the occlusion of gases by charcoal and by certain metals, and the imbibition and swelling of gelatine with water.

By adsorption is meant the condensation or concentration of a substance upon the surface of another substance in a different "phase"—for example, of a gas upon a solid, of a liquid upon a solid, or upon another liquid with which it does not mix. This conception of forces which are involved at the limiting surfaces of two different phases of matter has been shown to be of wide significance, and it has been the object of numerous recent investigations.

It includes the somewhat unfamiliar notion of the

importance of surface energy, and it differs essentially from absorption in this respect. Whereas with *ab*sorption we are concerned with the total mass or volume of the material, with *ad*sorption the action is directly proportional only to the surface extent, and represents a sort of cohesive affinity, different from chemical affinity, between the adsorbent and the thing adsorbed.

There can be no doubt that selective adsorption, often doubtless influenced by electrical attractions, plays a large and important part in the chemical processes of life, and helps to explain many otherwise obscure phenomena.

In the short time at my disposal it is impossible to develop this proposition and show its fruitfulness, and I must fain be content to adduce one or two illustrations of its application to dermatology. If a soap is dissolved in much water it is well known that it is partially hydrolyzed into fatty acid or an acid salt and free alkali. When this hydrolyzed solution, as in washing, is applied to the skin, the fatty acid is selectively adsorbed by the skin—that is, condensed or concentrated upon its surface. Then the remaining solution undergoes further hydrolysis, more alkali splits off, and so the process may go on until equilibrium is established.

Again, in practice we frequently make use of indifferent dusting powders, which often prove grateful and cooling to the skin. Obviously these powders, such as starch or fuller's earth, adsorb the water which issues from the skin, and therefore, in consequence of the large increase of surface due to this fine subdivision of the adsorbent, favour evaporation and practically increase for the time being the superficies of the skin. Unna has taught us that cooling of the body can be attained by covering the skin with a thin layer of gelatine or collodion, and the explanation is similarly to be sought in the consequent enlargement of the surface area of the body. For a colloid solution of gelatine is not a truly homogeneous liquid, but has been shown by the ultra-microscope to be a heterogeneous liquid containing infinitely minute solid particles.

Finally, I can merely remind you of the dominant place which colloids play in the preparation of medicated gelatines, pastes, and liniments.

DISCUSSION ON ACNE AND SEBORRHOEA, THEIR CAUSATION AND TREATMENT.

OPENING PAPERS.

I.—Arthur Whitfield, M.D., F.R.C.P.,
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The subject chosen for discussion appears to me to be of wide importance, and I feel, therefore, greatly honoured at being asked to open the debate upon it.

I should like to make it quite clear at the beginning of my remarks that I do not claim any originality for the views which I express, and that they are merely the outcome of my study of the work of others combined with my own investigations.

I believe that we shall all agree on the first point which I wish to make, that is, that although seborrhoea may exist without acne, there is no well developed case of true acne in which seborrhoea is not present. I therefore propose to begin my remarks with the discussion of seborrhoea, although I am aware that in the title of the discussion acne is placed first.

Beginning, then, with seborrhoea, we are at once met with the question, What is seborrhoea? Obviously, it is an excessive secretion from the sebaceous glands; but then we only push the question one degree further back, as it is extremely difficult to define what is excess of secretion where the amount is so variable in different individuals and different races. In these circumstances, therefore, I offer you the provisional definition of seborrhoea as a secretion which leads to pathological complications.

It is probable that this excessive secretion of the sebaceous glands is always associated more or less with a hyperidrosis or excessive secretion of the sweat glands as well, and anyone who has studied the anatomical relations of the two sets of glands will at once realize how impossible it is to separate the secretions of the two.

With these few preliminary remarks I propose to pass to the consideration of the causes of seborrhoea.

As to the cause of seborrhoea, I think we must admit that adolescence is a great cause. In the young child the sebaceous glands seem to secrete scarcely at all, but at the time that the mammary glands of the female, the reproductive glands in both sexes, and the facial hair in the male begin to show signs of development, the sebaceous glands also take on an active function, which often becomes excessive. Here we have an analogous state of affairs in the other glands which I have mentioned, the mammary glands of young girls often secrete a little milk, the testicles of boys also commonly secrete rather freely, so that what I may term a physiological spermatorrhoea is extremely common in adolescent males, and I think, therefore, that the seborrhoea of adolescence is nothing but the excessive secretion of a gland which has begun to take up its function, but has not yet attained regularity of action.

This irregularity of action seems to run in families to some extent, as we see that every member, or at least several members of certain families, show this adolescent excess on attaining the age of puberty. It is not comparable with the profuse secretion which occurs in certain races living in hot climates, as in these it does not necessarily lead to pathological complications. During adolescence this excessive secretion may be still further aggravated, and in other individuals an excessive secretion may be produced by certain other factors, which I will now indicate.

One of these factors is undoubtedly diet, and we know that the ingestion of large quantities of starchy, sugary, or fatty foods increases the secretion quite apart from the production of any dyspepsia. A second great cause is to my mind dyspepsia, using the term in the widest possible sense to include any error of function of the alimentary tract. A third is a hot, moist atmosphere, and a fourth is excessive clothing, especially when woollen material is worn next to the skin.

I now turn to the question of acne, and for the purpose of clearness I venture to remind you of the sequence of events. The first step is, as I have said, the occurrence of seborrhoea; the second is the production of the horny plug in the mouth of the pilo-sebaceous follicle, the comedo or blackhead; the third is suppuration, which, as a rule, takes place round only a small proportion of the comedones. This suppuration may be either superficial or deep in type, producing a small pustule beneath the horny layer, without much surrounding infiltration, or it may occur deep in the sebaceous gland, producing the type of lesion known as acne indurata; or again, there may be formed a deep lesion, which I have called the cyst abscess type, in which the production of rather mucoid pus is abundant, and in which opening of the lesion is followed by reaccumulation of pus and not by cure. All of these types may coexist in the same patient, but the cyst abscess type is much the least common, and where it occurs at all is apt to do so in many lesions in the same patient. I show you here a photograph of such a case. In addition to these inflammatory lesions there may occur, of course, a simple stagnation of secretion behind the blocked mouth of the follicle with the production of a sebaceous cyst.

Now, it appears to me that if we want to elucidate the march of events we must study the lesions both by the aid of the microscope and by culture.

If we study first the comedo by horizontal section we find that it is made up of more or less regularly arranged whorls of epithelial cells, between the layers of which we find abundant colonies of Sabouraud's microbacillus. Surrounding this lesion we find no evidence of inflammation, and the conclusion is forced upon us that the first step is the growth in the mouth of the follicle of the microbacillus and that the follicle, irritated by the presence of the bacillus, treats it as the epidermis always treats a non-pyogenic foreign body, that is, by attempting to encyst it. Successive layers of cells are produced by the successive attempts of the follicle to encyst the colonies, and the picture which I now show you results.

If, instead of cutting sections of the excised lesion, we content ourselves with expressing the comedo, making a smear preparation and staining it, we get what appears to be an almost pure culture of the microbacillus with

perhaps a few staphylococci and bottle bacilli, but neither of these will be in the form of abundant colony.

If we attempt culture from the comedo in the air we shall get a rapid growth of the few staphylococci present and no growth of the bacilli, so that the cultural results will in no way represent the true state of affairs. If, on the other hand, we carefully emulsify the comedo and cultivate it by means of a deep shake in glucose agar or otherwise anaërobically, we shall see that a very large number of colonies of the microbacillus and a very small number of colonies of the staphylococcus result. Unfortunately we still have no very suitable medium for the growth of the microbacillus, and, consequently, we may often have great difficulty in separating out the microbacillus, and even when we have done so successfully the bacillus is apt to die out very soon.

Again, if we cut sections of an acne pustule we find in the centre of the horizontal section a macerated comedo containing abundant colonies of the microbacillus, and this comedo is surrounded by a wide lake of pus. In this pus we may find fragments of lanugo hair, epithelial scales, and groups of detached microbacilli, the latter staining usually rather badly. In the pus also, and generally close to the wall of the abscess, we find colonies of staphylococci. I would draw your attention especially to the fact that the staphylococci are found best close to the wall of the abscess, because if one contents oneself with expressing the pus and staining it on a slide one may miss the organism, and, as a matter of fact, I have here a photograph from a case in which I failed to detect the staphylococcus by staining films, and yet the staphylococcus was in active growth, far removed from the comedo and deep in the abscess.

The reason why I lay such stress on this point is that it has been claimed that suppuration takes place in the comedo owing to the action of the microbacillus alone, and this claim is made because it is not possible in every smear to demonstrate the staphylococcus. I think the explanation is that which I have already given, and the same thing has occasionally been found by bacteriologists of the highest technical skill in the case of ordinary staphylococcic abscesses.

If you ask what evidence have I that the microbacillus is not pyogenic for certain individuals, I refer to another part of the same horizontal section, where we find cross sections of comedones in the near neighbourhood of the suppurating lesion, and yet, although they show abundant growth of the microbacillus, they show no sign of purulent inflammation. So that for this case, in which I may remind you again staphylococci were not found in the smears, we find on microscopic examination of sections the following facts: Abundant colonies of the microbacillus without colonies of staphylococci, comedo without inflammation, abundant colonies of the microbacillus *plus* colonies of the staphylococcus, comedo *plus* suppuration.

On these grounds, therefore, I base my belief that the genesis of acne is as follows: (1) Seborrhoea, a non-bacterial abnormality; (2) comedo formation, due to the infection of the mouth of the follicle by the microbacillus of Sabouraud; (3) suppuration round the comedo, due to growth of the *Staphylococcus pyogenes*.

I have limited myself to the staphylococcus as the pyogenic agent because it is so much the most common, but I would remind you that other pyogenic organisms, such as the *Bacillus coli*, have been found, and I see no reason why any pyogenic organism should not occasionally find its way into the mouth of the damaged follicle.

Before I pass on to the treatment of acne, there is one more point on which I should like to touch in a tentative manner, and that is the explanation of the variation in depth of the suppuration, which is so striking in acne cases. This puzzled me for many years, and still does so, but I believe that I have carried the explanation one step further back in referring it to the depth in the follicle at which the comedo is formed. In the superficial pustule it is always easy to see the black head of the comedo right on the surface, but in some of the deeper nodes one cannot see a comedo at all. Nevertheless, if one incises one of these nodes with care one will find buried deep in the sebaceous follicle a central plug which, on horizontal section, proves to be a typical comedo. Patients with this type of acne are generally those with extraordinary patulous follicles, and in addition to their suppurative lesions they usually show gigantic and twin comedones.

Turning now to the treatment of acne, I feel I have already detained you so long that I shall content myself with a short classification of the remedies which I have found of use.

1. *The Treatment of the Seborrhoea.*—Attention to the digestion and general hygiene and a diet low in those substances which I have already indicated as having an action in increasing secretion. The use of the *x* rays as causing temporary suspension of sebaceous activity. The use of caustics such as sulphur (probably acting as sulphuric acid), acids, acetic and hydrochloric, strong alkalis, soft soap.

2. *The Treatment of the Comedo.*—Mechanical extrusion, the *x* rays, and the use of microbacillus vaccines.

3. *The Treatment of the Suppuration.*—Surgical procedures, antiseptics as ointments or fomentations, the use of staphylococcus vaccines.

With regard to the other complications of seborrhoea mentioned in my abstract, I have nothing more to say than that I regard seborrhoeic eczema as a mixture which may be partly an infection of the surface by means of the bottle bacillus and partly a toxic eczema due to the irritation of the skin by the secretions decomposed by various organisms, chief of which is the non-liquefying staphylococcus or *Staphylococcus cutis communis*. I may emphasize the fact that the bottle bacillus does not depend upon a pre-existing seborrhoea to enable it to infect the skin, but may be found causing a pityriasis in the driest skins. Lastly, the so-called seborrhoea sicca is a desquamative affection of the epidermis and has nothing at all to do with seborrhoea.

II.—R. SABOURAUD,

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(*Translated by* Dr. R. W. MACKENNA.)

SEBORRHOEA ought to be defined by the characteristic feature of sebaceous hypersecretion. One should never apply this term to epidermic exfoliation. There is therefore only one variety of seborrhoea—that is, seborrhoea oleosa, and there is no such thing as seborrhoea sicca.

Hypersecretion of the sebaceous glands is accompanied by an enlargement of the sebaceous orifices, and by their apparent obstruction by a plug of fatty material, which constitutes on the face what Biett and the older French writers called acne sebacea. Acne sebacea may occur in all degrees of severity up to acne sebacea fluenta, in which the fatty secretion, in a semi-solid condition, may accumulate on the surface of the skin. This is a rare form, met with in the young. In its ordinary variety seborrhoea evolves in the direction of acne with comedones and polymorphic acne. Thus the older writers recognized that a simple seborrhoea always precedes polymorphic acne, acne with comedones, etc.

If we examine the fatty seborrhoeic plug dissolved in cedar-wood oil, we invariably find in it, and sometimes in amazing quantities, the *Demodex folliculorum* of Simon and Gruby. This acarian parasite does not appear to play any pathogenic rôle itself, but the great mobility of its octopedal larva permits of our attributing to it the rôle of a "carrier" in many diseases of the skin. Borrel has accused it of conveying the contagion of leprosy, and that of epithelioma. This rôle is open to question. But the *Demodex* without doubt carries the microbacillus which we invariably find in the fatty seborrhoeic plug, of which the comedo is nothing more than an exaggerated example.

The microbacillus of seborrhoea discovered by Unna and Hodara, who regarded it, somewhat narrowly, as the microbe of acne with comedones and polymorphic acne, is really the microbe of seborrhoea oleosa. Each fatty seborrhoeic cylinder is a colony of several million specimens. This organism can be grown, in aërobic cultures, on slightly acid glycero-gelatine, as I showed in 1897, but much better on gelatine covered with a thin film of sterilized butter, as Mauté showed in 1909. Hallé has proved that the microbacillus grows in strictly anaërobic cultures. It appears that to grow it in aërobic cultures one requires to implant particles of the fatty cylinder

sufficiently large to allow of the microbacillus growing anaërobically in their centre.

The rôle of the microbacillus in the production of seborrhoea oleosa and its sequelae (acne with comedones, polymorphic acne, and seborrhoeic alopecia) is not yet experimentally proved. Up to the present this microbe remains the constant feature in all the various localizations and manifestations of seborrhoea oleosa, but it has not been proved to be the cause of the condition. It may be an inactive tenant of the seborrhoeic plug, a view which is still maintained by some writers.

The constant presence of the microbacillus in seborrhoea, and its countless multiplication in the pilo-sebaceous orifices of seborrhoeic people, render improbable the view that it is nothing more than an innocent tenant of the lesions in which it dwells, but one can say no more than this. Those who believe in its etiological rôle in seborrhoea cannot further explain its harmful action than by hypothesis—for example, seborrhoea is caused by the stimulation of secretion set up by its toxins, or may result from the simple mechanical obstruction of the orifice of the gland, since every gland whose duct is closed responds by hypersecretion.

One cannot, further, prove for the moment the part played by the microbacillus in the alopecia which accompanies seborrhoea, and which constitutes the objective type of male baldness. The experiments which I have carried out on the rabbit, the horse, the dog, the sheep, are difficult to interpret. The subcutaneous injection of cultures of the microbacillus soon brings about, even at a distance from the point of injection, patches of alopecia. But alopecia, and even alopecia areata, are frequent in animals after inoculation with different microbes, and this fact prevents us from coming to any definite conclusion.

Every true seborrhoea is microbacillary, but every case of seborrhoea does not evolve into a polymorphic acne. If, then, the microbacillus is the cause of acne, it can at least only produce it with the help of other factors of which we are ignorant. One may, however, say that in polymorphic acne the microbacillus is the one organism which is constant, and that the ordinary organisms of suppuration are far from being always found there, and even may be met with there only in exceptional cases. What Unna has said on this subject is perfectly true.

What we know concerning the remote and immediate causes of acne is as follows: There are for a certainty other more general, but still obscure causes. The fact that the development of acne coincides with puberty in both sexes, and the fact that acne in women is often influenced by the menstrual periods, would seem to indicate a very important relation between the internal secretions of the sexual glands and the development of seborrhoea.

On the scalp, pityriasis simplex, which appears to be caused by the spore of Malassez (which is a blastomyces), is not of the same microbic nature as acne and seborrhoea, but its development on the scalp at the same time as acne of the face led Hebra wrongly to associate pityriasis with seborrhoea under the name of seborrhoea sicca—a title which should be abolished. Puberty would also appear to have some influence upon its development. It begins to appear about the eleventh or twelfth year, and it regularly precedes by six or seven years the development of microbacillary seborrhoea on the scalp. Pityriasis is therefore a pre-seborrhoeic phenomenon. About the fifteenth to the seventeenth year the dry scales become greasy—steatoid pityriasis—and underneath them microbacillary seborrhoea develops.

Steatoid pityriasis and seborrhoea oleosa, of microbacillary origin, of the scalp, are always accompanied by an alopecia, which is chronic and progressive, and which differs in form, frequency, and severity, according to sex—a new proof of the part played by the sexual glands in the production of the phenomena of seborrhoea. Man becomes gradually bald on the vertex, until all the hairs are lost from this region, and this always occurs simultaneously with the evolution and spread of the microbacillary infection and seborrhoea to all the pilo-sebaceous orifices.

In woman this infection is always more diffuse, for it also affects the temporal regions, which escape in man, and it is always less complete. Woman never becomes bald in the same way as man, nor so completely. In her the regrowth of the fallen hair is much more constant. Although, after having been shed and regrown a certain number of times the hair in man ceases to grow again, in woman it continues to grow again almost indefinitely. Besides, in woman, certain hairs are not affected by seborrhoea in so great number that alopecia in woman is either complete or permanent.

It is remarkable to notice that in both sexes seborrhoeic alopecia almost always begins about the 17th year. Between the ages of 17 and 22 one is able to know almost all the men who will become bald, and the women who without becoming bald will shed their hair all their lives.

An experiment seems to verify the important part played by the sexual glands in the causation of seborrhoea. It is the fact put forward by Aristotle in his *Problems*: "Neither suckling, nor woman, nor eunuch becomes bald." I have prosecuted an investigation of this subject with the help of several friends in Constantinople and Cairo. At this moment it is being continued among the Russian Skoptzi, who have almost all emigrated to Bucharest. Actual statistics show that among about 300 eunuchs not a single case of baldness has been met with. This inquiry deserves to be followed up. If the fact enunciated by Aristotle is invariably true the rôle of sexual activity in certain seborrhoeic conditions will have been proved, but it will not have been explained, for there is a large number of men who are not affected with baldness and who are not eunuchs. It remains to discover the mode or the abnormality in the activity of the glands which gives rise to or favours the phenomenon of hyper-seborrhoea. It is possible that the fatty acids secreted by the sebaceous glands are not the same in all people, and that, according to their nature, they permit or hinder the implantation of the microbacillus and its development. But all this has yet to be cleared up.

In this connexion one ought to mention the researches of Jacquet on hyper-seborrhoea in the suckling and even the fetus. It would appear that there is, towards the time of birth, a short-lived activity of the sexual glands and of their adnexae—secretion of milk, mastitis of the newborn—and that the abundant fatty secretions of the skin are accompanied by a fall of hair which ceases when these transitory phenomena cease. But it is not proved that the formation of crusts, which appear to be seborrhoeic, on the scalp of the newborn child is a phenomenon of hypersecretion. It would appear rather to be a symptom of exfoliation. It is, however, possible that we have to deal with two associated phenomena of glandular hypersecretion and surface exfoliation. There are still, however, facts which require further investigation. These appearances in the suckling are not microbic, and their study will enable us to eliminate, according to their author, the rôle of the microbacillus in seborrhoea of the adult. One must always be careful not to come to too rapid conclusions either in one direction or the other. The causal rôle of the microbacillus in seborrhoea is not proved; but, on the other hand, it is not proved that it does not play a part. Its invariable presence in seborrhoea ought to make us suspend every conclusion till we can prove one.

Finally, the sebaceous acne, polymorphic and congestive, of the fifth decade in women, and the sixth decade in men, the acne of involution, so well studied clinically by Schultz of Frankfort, would also appear to demonstrate the action of the sexual glands on acne at the climacteric.

Seborrhoea and acne are also influenced in a very marked way by digestive troubles. The acne of constipation, and the congestive acne of hyperchlorhydria are facts which the practice of the day can verify. But it would appear that in these cases we are dealing with accessory influences, which exert their influence rather to determine the external situation and the objective appearance of the seborrhoeic symptoms than on the intensity of the development of seborrhoea in general.

In my hands at least, Wright's method of vaccination by the injection subcutaneously of dead microbacilli has not given enough appreciable results in cases of acne and seborrhoea.

DISCUSSION.

Dr. PHINEAS ABRAHAM said: I think we must all thank Dr. Whitfield for the very able and comprehensive sum-

mary of the subject which he has given us to-day, and I am sure that with nearly all that he has stated most of us will cordially agree. I am glad, for instance, that he apparently admits a constitutional element in the seborrhoeic condition, and that he considers the absorption of toxins of some importance in the causation of these affections—for it was not so very long ago that seborrhoea and acne were regarded by prominent dermatologists as purely local affections having no relation to any internal derangements. As regards acne, at any rate, I have been for many years convinced that the large majority of cases show definite evidence of some digestive, circulatory, or other functional disturbance. Most of my cases, indeed, have been dyspeptic, constipated, or anaemic—and exacerbations in women, as every one knows, are especially common at the menstrual periods. While we must all accept the rôle played by Unna's and Sabouraud's bacilli—and by the subsequent staphylococcic invasions, in the production of the lesions, as Dr. Whitfield has now so conclusively demonstrated—I for one have long maintained that these micro-organisms will only grow and become pathogenic if the soil has been rendered suitable by the presence within it of some toxin or abnormal substance. It is chiefly, however, in reference to the treatment of acne that I wish to speak to-day. Regarding as I do internal medication in these cases as of no small importance, the large majority of my cases have to take some medicine as well as at the same time to adopt external treatment. In many cases, especially where there is constipation or something wrong with menstruation, an aperient ferruginous bitter mixture is most useful, for example, the usual M. F. A. mixture with nux vomica; in others with flatulence, no constipation, but considerable congestion of the face, the ordinary compound bismuth mixture, and sometimes ichthyol in 5-minim doses, are to be recommended. As Dr. Whitfield has indicated, diet should be considered in these cases. I insist, among other dietetic points, upon the teeth being seen to, no rushing of meals, drinking at the end and not at the beginning of meals, as a rule forbidding strong tea or coffee, nothing very hot or very cold—and, what most of my patients do not like, knocking off, in some cases, all uncooked fruit or uncooked vegetables! In most cases—but not always—I stop all alcoholic drinks. One cannot, however, cure a bad case of acne by these means alone—external remedies must be employed. As Dr. Whitfield says, sulphur is still of great use, either in the old alkaline lotion, or, in most cases, better still, in the form of a compound sulphur ointment. I desire to take this public opportunity of thanking the President of this Section—Dr. Walter Smith—for showing me, many years ago, in 1880, how to treat really bad cases of acne. A relative of mine who suffered from severe indurated acne had been for several years under treatment by two of the greatest authorities of that day, with but little benefit. Dr. Walter Smith happened to be in London at the first International Medical Congress, and he kindly saw the case and advised me to press out the comedones, puncture the pustules, evacuate the contents, and apply to each lesion the smallest possible driplet of pure phenol at the end of a sharply-pointed piece of matchwood, subsequently using the usual sulphur applications, regulating digestion, etc. The result was that in a few months the lady was quite cured. Ever since then I have treated my cases, when possible, on similar lines, and I may say with very great success. In place of pure liquid carbolic acid, I am now using a liquid formed by mixing together crystals of pure carbolic and solid camphor, generally in equal parts or with rather more carbolic acid, say 3 to 2. I find this not too caustic, but quite efficacious. Given the necessary time and trouble, I believe that even the most severe and long-standing cases will yield to this treatment when combined with the other measures to which I have alluded. Such being my experience, and as I have seen so many failures, and indeed disastrous results, under the at present fashionable vaccine therapy, I need hardly say I am not recommending my acne patients to become the subjects of experiment in immunization by vaccines. For, although I admit that some cases have done remarkably well after inoculations, many have been made much worse, and some indeed disfigured for life. I think it will be agreed that the whole question of the vaccine treatment of diseases of the skin is still in the experimental stage, and such being the case I cannot understand why, as I am told, some practitioners are advising it in all cases and putting their patients to enormous expense in carrying it out.

Dr. J. Goodwin Tomkinson (Glasgow) said: It would appear that seborrhoea and its sequelae are the result of a combination of factors rather than of one specific cause. The profound changes consequent upon puberty associated with the frequent disregard of dietetic rules and intestinal hygiene and the microbic flora found in the condition should, however, direct us to rational and successful methods of treatment. While a broadly catholic attitude should be maintained towards all therapeutic agents, I think the vast majority of cases of acne vulgaris will yield to local treatment—evacuation of the sebaceous follicles, sulphur baths, and sulphur and salicylic acid ointments, etc.—and appropriate general treatment, which in a large number of cases means a suitable dietary, regulation of the bowels, and the exhibition of haematinics. Vaccine treatment in most if not all cases of acne vulgaris is quite unnecessary. I have been consulted by more than one patient suffering from extensive acne vulgaris formerly under vaccine treatment, where little if any benefit had resulted. However, under such a regimen as that to which I have alluded improvement rapidly ensued. The all-important thing is to ensure the carrying out of the treatment. There are, however, resistant cases which, as every one conversant with *x*-ray therapy knows, are markedly benefited by careful irradiation. In a case of that hypertrophic form of acne rosacea described as rhinophyma, where the dimensions were scarcely such as to warrant surgical interference, the careful electrolysis of the individual follicles was followed by most excellent results, the nose decidedly diminishing in size and improving in shape. We are waiting for a satisfactory classification of those conditions which are included in the term "seborrhoides." I do not find all of these equally responsive to treatment. In a very rebellious psoriasiform seborrhoide—it was not psoriasis—which came under my notice thyroid extract proved the most potent agent in removing what was a very persistent and disagreeable condition.

Dr. Leslie Roberts (Liverpool) agreed that seborrhoea should be clearly distinguished from acne. It was essentially an epithelial hyperplasia occurring under the influence of some chemical substance within the body and corresponding in time of prevalence with the development of the sexual organs. The clinical features associated with acne were due to the fermentation set up in the connected comedo by the microbacillus and *Micrococcus albus*.

Dr. Galloway (London) mentioned that Indian students when living in London were much more subject to seborrhoea and acne than those among whom they were living, probably owing to the moisture of the British climate.

Dr. Norman Walker (Edinburgh) thought systemic treatment of much importance, but regarded vaccine treatment as of much value, strong doses rather than low ones being employed.

ON SPOROTRICHOSIS.

By Dr. Lucien de Beurmann,
Physician to the Hôpital St. Louis, Paris.

(*Translated by* Dr. R. W. MacKenna.)

Sporotrichosis is a new disease. In less than ten years my researches and those of my disciples and collaborators have demonstrated its existence, have studied it thoroughly, and have proved its importance.

Everything, however, points to the fact that sporotrichosis existed before this, but the symptoms were confused with those of syphilis, tuberculosis, and coccal infections, etc., which they resembled in external appearance, and from which it was necessary to distinguish them. The essential new thing is this—that we have succeeded in tracing to their true pathogenic source affections which had been erroneously attributed to other

causes, and in having given to the physician the means of curing them readily.

Sporotrichosis.

Sporotrichosis is an infection common to man and animals. It is caused by filamentous spore-bearing fungi of the genus *Sporotrichum: Sporotrichum schencki*, *Sporotrichum beurmanni* (and its varieties, *Sporotrichum beurmanni* variety *asteroïdes*, *Sporotrichum beurmanni* variety *indicum*), *Sporotrichum jeanselmei*, *Sporotrichum gougeroti*, *Sporotrichum dori*, each parasite serving to define a sporotrichosis of the same name. "There are therefore not *one*, but *several* sporotrichoses."

The variety of sporotrichosis most frequently met with is that which is caused by the *Sporotrichum beurmanni*. Since the first case, published by de Beurmann and Ramond in 1903, more than 200 cases have already been put on record. It has been met with at all ages and in all surroundings. It has been seen in Paris and in most of the provinces of France, and in many countries besides France. In Brazil it has been observed by Lutz and Splendore and by Lindemberg; in the Argentine, by Baliña and Marco del Pont and by Greco; in Madagascar, by Carougeau; in Belgium, by Lerat; in Switzerland, by Jadassohn and Stein, by Bruno Bloch, by Du Bois, by Oltramare, by Dind; in Austria, by O. Krenn and Schrameck; in Germany, by Arndt, by Fielitz; at Strassburg, by A. Wolff and Hügel; in Columbia, by Posada Berrio; in Spain, at Madrid, by E. de Oyarzabal, and at Barcelona, by T. Peyri; in Ceylon, by Castellani; in Tonkin, by Seguin; in Guiana, by Henry; in Italy, by Campana, by C. Vignolo-Lutati, by Curcio, and by Caruccio; at Constantinople, by Menahem Hodara and Fuad Bey; in Croatia, by Slamjer; and finally, in England, by Adamson, by Offenheim, by Walker and Ritchie, etc.

Even in the United States of America the question of sporotrichosis, which had remained in the background, has assumed importance. The two cases of Schenck and of Hektoen-Perkins, and the doubtful case of Brayton, were so far forgotten that Lutz and Splendore, in seeking to identify the parasite which they had found at Sao Paulo in Brazil, did not even know of them. The success of the sporotrichosis of de Beurmann rescued these isolated facts from oblivion, and, thanks to the movement initiated by my researches and those of my disciples, numerous cases of sporotrichosis were discovered in man and in the horse in 1909 and 1910 by Burlew, Trimble, and Shaw, Page and Frothingham, Hyde and Davis, and by Duque of Cuba, etc.

The remarkable work of Page, Frothingham, and Paige has proved that there exists in the United States an indigenous form of sporotrichosis, which affects horses, and which had already been discovered by Carougeau at Madagascar. These writers attribute the disease they have observed to the Sporotrichum of Schenck, and their actual cultures resemble our cultures of the *Sporotrichum beurmanni*, while those which Hektoen sent me in 1906 differ from them considerably.

The question of the relationship of the different varieties of Sporotrichum is a very difficult one, and is too essentially a botanical question to be dealt with here. Let it suffice to say that the *Sporotrichum dori*, which has only been observed once, and of which the cultures have been lost, is in doubt, and perhaps is not a Sporotrichum, while the other Sporotrichs are probably derived from one common parent stock, and may be classed thus:

Sporotrichum schencki.
Sporotrichum beurmanni.
Sporotrichum beurmanni, variety *asteroïdes* (Splendore).
Sporotrichum beurmanni, variety *indicum* (Castellani). (Culture lost.)
Sporotrichum jeanselmei.
Sporotrichum gougeroti.

The *Sporotrichum schencki* and the *Sporotrichum beurmanni* are very closely related to each other, and may be regarded either as different varieties of the same parasite or as different species, but we have never been able to fit into the type of *Sporotrichum beurmanni* the specimen cultures of *Sporotrichum schencki* sent us in 1906 by Hektoen.

I have already pointed out that Carougeau at Madagascar, and then Page, Frothingham, and Paige had described a spontaneous form of sporotrichosis of the horse and mule. Lutz and Splendore discovered at Sao Paulo, in Brazil, the spontaneous sporotrichosis of the rat; and Gougerot and Caraven discovered in Paris spontaneous sporotrichosis in the dog.

The distribution of sporotrichosis is therefore very wide, and it has been found in the most diverse countries and climates. Everything points to its being a malady of universal distribution, and that it will be found in all countries where it is systematically sought after, and that its frequency will be recognized when not only dermatologists, but physicians, surgeons, ophthalmologists, and laryngologists will bear this fungus in mind.

Parasitology.

The *Sporotrichum beurmanni*, whether we are dealing with cultures from lesions in man or animals, or from the uncultivated sporotrichum found in nature by Gougerot, is filamentous and spore bearing. "Microscopical examination," say Matruchot and Ramond, "enables us to recognize with ease that this fungus has the same mode of fructification as the sporotrichum." The mycelium is creeping (*repens*), fine, measures about 2 μ in diameter, is partitioned, colourless, much branched, and tangled. The spores appear situated along the length of the recumbent filaments, either at their extremities or on branches. They are arranged in cylindrical cuffs, about 10 μ in size, and in glomeruli. As a matter of fact, the spores are really isolated from one another. They arise one by one in variable numbers along the mycelium, but, as a rule, in very large quantity on each segment of the thallus. There is no apparent order in their arrangement.

So long as it remains on the filament the spore appears pear-shaped. It is attached by a very fine sterigma from 1–2 μ in length, and from 0.5 μ in width. When shed the spore is oval. Its dimensions vary from 3–5–6 μ in length, and from 2–3–4 μ in width. "The form, the disposition, the brown colour of the spores, and their fructification in the form of cylindrical cuffs, arranged in bunches at the extremity of the filaments, constitute, together with the original substratum of the fungus, a group of characters which differentiates this variety sharply from all the other sporotrichs." (Matruchot.)

In the tissues and in pus this parasite has quite a different appearance. It assumes a *short oblong form*, which we described in October, 1906. It resembles a thick short bacillus, from 3–5 μ long and 2–3 μ broad, basophilic and finely granular, and surrounded by a very delicate colourless membrane. This short variety, a form degraded by facultative parasitism, is met with in all the lesions in men and animals, even in the epidermic scales. We have demonstrated the transition of this short variety, observed *in vivo*, to the filamentous form of cultures *in vitro*, by practising the autocultivation of sporotrichotic pus on dry plates. From day to day we have watched on these plates the transformation of short forms into fine filamentous stars, which become spore-bearing.

Pathological Anatomy.

Working with my disciple Gougerot, I made a complete anatomical and histological study of the lesions of sporotrichosis in our first and second communications to the *Annales françaises de dermatologie et de syphiligraphie* (1906–7). Our researches have been completely confirmed by those writers who have devoted attention to this part of the question.

The *Sporotrichum beurmanni* is able to give rise to multiple lesions in the tissues. The most characteristic is the nodule, in which we find three processes, sometimes mixed up in an irregular manner, but most frequently arranged concentrically. "In the centre an abscess containing polynuclear leucocytes and macrophages; in the intermediate zone an area of degenerated epithelioid giant cells and tuberculous follicles, and at the periphery a proliferation of basophile lymph and connective tissue cells or a fibro-cellular infiltration."

The structure of sporotrichomata is, therefore, very closely allied to that of the lesions caused by syphilis, tuberculosis, and by the agents of chronic suppuration, and it resembles sometimes the one, sometimes the other. In an area sufficiently extensive to enable us to judge of all the processes, it is very rarely that we do not see a rough sketch of this diversity, and that we do not find perifollicular vascular engorgement, and dilated capillaries round aggregations of giant cells, which indicate the haematogenous origin of the lesions.

The structure of the sporotrichoma has been found in hemisporosis by Gougerot and Caraven, in the exascoses (blastomycoses) by Queyrat and Laroche, in oïdiomycosis by de Beurmann, Gougerot, and Vaucher, in favus nodules by Darier and Hallé, etc. Sporotrichosis has therefore enabled us to fix the general formula of the mycoma, and has made an important contribution to general pathological histology.

Etiology and Pathogenesis.

The etiology and pathogenesis of the sporotrichosis of de Beurmann have been almost entirely elucidated by the memoirs published in collaboration with Gougerot in 1906 and 1907, and by the observations which we have subsequently gathered together.

The *Sporotrichum beurmanni* is met with in *a saprophytic state in nature*, as has been proved by the discovery of two specimens growing wild in the French Alps. It grows on vegetables, living or dead. It may be easily cultivated at all temperatures between 12° and 40° C., the optimum temperature being between 20° and 30° C. The spores can survive temperatures of 0° and 55° plus. At ordinary temperatures they preserve their vitality for years. They are only slightly sensible to the action of the sun's rays and the inclemencies of the weather, and cultures left in the open air are still living after more than a year. The sporotrichum is very hardy; it vegetates on poor soil, such as bark and thorns, and one may find it on salad, on potato, grain, etc. The opportunities for coming into contact with it are, therefore, very frequent. The intermediate agents which may introduce the germs of sporotrichosis into the organism are very varied. One of the chief modes of inoculation is through a wound of the skin or mucous membrane.

All objects soiled with vegetable débris loaded with parasites may inoculate the Sporotrichum if they come in contact with a wound of the skin or mucous membrane. In our case No. XII, the patient, a greengrocer, had received a blow with a coster's awl on the forehead. He had not dressed the wound, and he concealed it under an old cap which usually lay on the fruit and vegetables which filled his barrow.

In the case recorded by de Beurmann, Gastou, and Brodier the patient was a market woman, and the sporotrichum was found on the salad which she was in the habit of selling and picking all day. In the case recorded by Dominici and Duval a gummatous ascending lymphangitis of sporotrichal origin developed as a sequence to a finger cut sustained in peeling a potato. In a case studied with Saint-Girons the parasite was inoculated by a thorn from a barberry bush. As the sporotrichum lives in the soil, a wound contaminated by earth may also be the point of origin of the infection. The development of the parasite on certain living insects, notably on flies, wasps, and ants, warrants the presumption that the bite or sting of these creatures may inoculate man.

We know of several cases in which the animal origin of sporotrichosis has been proved. A patient of Lutz was inoculated by the bite of a rat in Brazil, at Sao Paulo, where Lutz and Splendore have demonstrated the frequency of spontaneous sporotrichosis in the rat. Jeanselme and Paul Chevallier have published a very instructive case of the same kind.

Carougeau has reported the case of a veterinary surgeon who inoculated himself by pricking himself with a bistoury which he had used to open sporotrichotic abscesses in mules and horses affected with the "epizootic equine sporotrichosis of Madagascar." Wyse-Lauzun of Marseilles has quoted a case in which the bite of a parrot was the starting point of the infection.

Since the sporotrichum may, as we have shown, live as a saprophyte in the pharynx of certain people, a "carrier" of the organism may inoculate an insignificant abrasion by wetting it, as is the popular custom, with saliva. The healthy epidermis may act as a portal of entry. The sporotrichum may invade the hair follicles, and may there set up folliculitis, or acne, and thence may gain the lymphatics. (De Beurmann and Gougerot, patient No. VI, and de Beurmann, Gougerot, and Laroche.)

A second method of introducing the sporotrichum into the organism is by food. Green vegetables, berries, fruit, flour, wine, preserves, etc., are good culture media for it, and man may become infected by articles of diet partaken of raw or insufficiently cooked. Thanks to the leucocytes, which convey the parasite, it may find its way through the healthy mucosa of the gastro-intestinal track, or through insignificant wounds.

The point of inoculation is sometimes the skin, sometimes a mucous membrane. In the localized gummatous form of lymphatic sporotrichosis, it is generally to be recognized by an initial lesion—abscess, serpiginous or papillary ulceration, analogous to the inoculation of tubercle from without. But the site of inoculation may not be marked by any lesion. In our thirteenth case the point of entry was almost certainly a wound of the wrist, which healed up as a simple wound, and the lymphatic cord, studded with ulcerating gummata, only began at a somewhat higher level.

In disseminated sporotrichosis, which my researches have shown to be the most common variety, the portal of entry had not been suspected until our study of ulcerating sporotrichosis of the mucous membranes. Our patient No. VI, who carried long after the disappearance of his ulceration a saprophytic sporotrichum in his pharynx, had quite a series of attacks of sore throat, which were probably dependent on the presence of the fungus. At that time we imagined that, in his case, the parasites had entered the circulation by the bucco-pharyngeal mucosa, perhaps through the tonsil, unless the sporotrichum, swallowed with the food, had made its way through the gastro-intestinal mucosa, a less resistant barrier than the pavement epithelium of the bucco-pharyngeal cavity. Numerous facts have confirmed this hypothesis.

We have been able to reproduce in animals disseminated and generalized sporotrichosis by introducing the sporotrichum by these two routes, by subcutaneous injection, or by feeding with milk containing the parasite. In order to confirm the possibility of infection in man by the digestive tract, we made a series of cultures and of artificial digestions, proving that the parasite resisted the action of the digestive juices, and that one could recover it in a living and cultivable condition in the faeces of animals which had swallowed it.

The invasion of the organism takes place sometimes along the arterial stream, and sometimes by the lymphatics. In disseminated sporotrichosis the parasite is carried by the arterial blood stream, as the intense histological lesions of the vessels, the study of its histogenesis, and, above all, experiment have proved. Widal and Weill were the first to give direct demonstration of this fact by haemoculture. In the systemic lymphatic form the sporotrichum follows the lymphatic channels, in which it remains localized. In the disseminated form, with multiple lesions, a gumma of haematogenous origin may invade the lymphatics of a limb, and set up a secondary ascending lymphangitis.

The influence of the soil on the development of the sporotrichum is considerable. A healthy and vigorous man seems most often to escape the infection. In spite of the negligence with which most patients dress their wounds, there has been no cause to suspect a family infection, except in one case of Widal and Joltrain. A study of the observations shows that the patient's constitution was almost always below par when the mycosis developed. Most of the patients have been convalescents, overworked or cachectic subjects. The usual cause of the feebleness observed is tuberculosis. One should, therefore, hesitate to rule out sporotrichosis when dealing with a doubtful lesion, because one has found in the patient signs of bacillary infection. Sporotrichosis, like other mycoses, requires for its implantation and development "an enfeebled soil, a condition of lessened resistance, and the *Sporotrichum beurmanni*, a micro-organism of feeble virulence, experimentally, is not able to overcome the resistance of the healthy organism except in exceptional cases." Our experimental researches have proved that the fungus by its toxins sensibilizes the host, and that one must add to this diminution of the resistance of the soil an adaptation of the germ to the medium, and an adaptation of the medium to the germ.

Symptomatology.

Clinical Varieties.

I have tried to determine the symptomatology and to describe the principal clinical forms of sporotrichosis. It is probable that all the lesions which the *Sporotrichum beurmanni* may set up are not yet known. Up till now,

we know that sporotrichosis is far from being a malady which affects the skin alone. It affects the subcutaneous tissue, the corium, and sometimes the epidermis. It invades the lymphatics, and may affect the glands. It injures the mucous membrane, the eye, bone, the articulations, synovial membranes, muscles and viscera, testicles, kidneys, etc.

This multiplicity of forms and of lesions shows that sporotrichoses are of interest not to the dermatologist alone, but to the physician, the surgeon, the laryngologist, the ophthalmologist, etc., and that, far from being rarities reserved for specialists alone, they belong to general pathology and everyday practice.

I shall briefly describe the most frequent varieties.

1. Disseminated gummatous sporotrichosis (de Beurmann and Ramond, 1903; de Beurmann and Gougerot, 1906).

The onset is insidious, and it is almost always an accident which leads to the discovery of the first gummata. Their number is very variable, and may range from 4 to 35, and may even exceed 100.

The first takes origin at any point of the subcutaneous tissue. They are scattered without any systematic arrangement, without any selective localization over the whole body. All regions may be affected, but the head, the scalp, and the extremities of the limbs are often free. Each gummatous nodule has an autonomous evolution which is the same for all. At first it is a little rounded mass, hard, elastic, painless, and movable in the subcutaneous tissue. The mass evolves rapidly in the direction of softening, and in four to six weeks terminates in a characteristic cold abscess. When it undergoes liquefaction it contains a fluid which is at first transparent, viscous, gummy, and with purulent streaks, and later it becomes opaque, thick, and purulent. It does not undergo complete softening, and when it becomes fluctuating we find a central cup-shaped depression, surrounded by a firm and resisting zone, and when its contents are evacuated there remains round the empty pocket a persistent and indurated ring.

The nodes, which have become transformed into little fluctuating abscesses, have not any tendency to open spontaneously, nor to grow in size, nor to disturb the general health. This stationary condition, succeeding to a stage of rapid growth, is quite characteristic. It is accompanied most often by the appearance of new elements, which follow the same evolution as the first, and pass into suppurating lesions.

In this variety of sporotrichosis it is rare for the suppurating gummata to result in an ulceration of the skin. Almost always any ulcerations observed are consecutive to the surgical incision of a small abscess which has not opened spontaneously. The lips of the incision may remain inert, thickened, and slightly rose-coloured. The base of the wound, which is very slightly granular, secretes only a few drops of thick serum, clear or purulent. Or the skin may become thinned out and destroyed, and the linear wound may be transformed into a round syphiloid ulceration, with a slightly granular base, which secretes sero-pus, and the lesion is covered by a thick crust. A purulent collection keeps accumulating under the crust, or in the fistula which tends to cicatrize. At this third stage the disease is characterized by a mixture of gummata in all stages of evolution. Those which have ulcerated sometimes infect the skin around them and give rise to new lesions. As a rule, if the disease is not treated it becomes chronic. The lesions multiply without changing their appearance. Adenopathies may occur, though they are not common. The general condition remains good. To sum up: The disease is polymorphic only in appearance, since the elementary lesion, the sporotrichotic gumma, is always the same.

2. Disseminated subcutaneous gummatous sporotrichosis with ulceration (de Beurmann and Gougerot, 1907).

In this variety, the subcutaneous gummata, after having passed through the phases which we have just described, become hypodermo-dermic, and destroy the skin by ulceration more or less rapidly, sometimes in twenty days, sometimes in two or three months. Spontaneous sporotrichotic ulcerations have very varied appearances. As a rule they are tuberculous in appearance. Frequently the ulceration is, at first, no more than a narrow fistula, from which oozes a viscid, colourless, or sometimes reddish pus, or a yellowish serous fluid. The fistula has violaceous edges, loose and irregular, thin, or, on the contrary, swollen. The ulceration involves only a part of the skin loosened by the pus, and the finger can make out through the thin violaceous derma a kind of cup surrounded by indurated edges. It is this which we have called "cup-like softening." If, sometimes, there is only a narrow opening, difficult to see, one may also find "a large wound more or less rounded, whose edges are loose and irregular, and violaceous or brownish-violet in colour, and indented or rectilinear; and whose base, which is sometimes covered with a thin pellicle of pus, bleeds on the slightest touch. The ulceration remains active, or may become covered with a thick, dark crust, under which the pus accumulates, as also in the recesses which the detached skin makes."

A less common variety is the ecthymatous or rupial form of ulceration. The lesion resembles a coccal ecthyma, or certain varieties of tertiary syphilis, or the ulceration of early malignant syphilis.

Adenopathies are rare, but not exceptional. Neglected sporotrichotic ulcerations linger for months, and even for years. Spontaneous healing is slow and inconstant. The cicatrices may resemble tuberculous scars, with a thickened and cheloidal centre, or they may look like syphilitic scars, "fine, smooth, and polycyclic, or surrounded by satellites of pigmented scar tissue." But in most cases they have a special appearance; they are "narrow, irregular, linear, or stellate, often hidden by the incompletely attached tongue-like processes of the old fistula. These processes of pliable skin, irregularly held down by cicatrization, form little teats." A large areola, which is at first brownish-violet in colour and later becomes brownish, surrounds the cicatrix, and persists for several months.

The evolution is slow. Local pain is exceptional. Occasionally there is a little stiffness or sense of fatigue in the limb affected. The general health, which is good at first, alters as time progresses. The patients become paler, and lose flesh, and become fatigued, but they do not give up working.

Sporotrichotic ulcerations are therefore polymorphic, and one often finds in the same patient lesions of very different appearance—"fistulous openings, and large tuberculous-looking ulcerations, with undermined edges and crateriform punched-out ulcers, resembling the breaking down of a syphilitic gumma; ecthymatous or rupial lesions, or lesions like boils, etc."

From the very first we have insisted on "this mixture of lesions of different appearance, which is one of the best clinical signs for the diagnosis of sporotrichosis."

3. Mixed forms are frequent. When sporotrichosis has existed for a long time it presents as a rule a complete clinical picture. Side by side we meet with lesions of different age with different tendencies and different appearances; tuberculous-looking, syphilitic-looking, ecthymatous, rupial and furuncular. We may find associated lesions of the lymphatics, and lesions of the dermis, epidermis, mucous membranes, muscles, osseous tissues, synovial membranes, eyes, epididymis, etc.

We have described large subcutaneous cold abscesses and gummatous lymphangitis, with gummata arranged according to size along the affected limb, as well as involvements of the lymphatic glands. We may further observe in the same patient cutaneous lesions of different forms—papules, vesicles, vesico-pustules, pustules of greater or smaller size, ulcero-crustaceous lesions, lupoid infiltrations, ulcerated or non-ulcerated, which resemble tuberculous lupus, patches of fungating and "weeping" papillae, or verrucose and squamous sporotrichotic lesions which resemble tuberculosis verrucosus, and trichophytoid kerion; epidermic lesions, trichophytoid lesions of the epidermis surrounding an ulceration, the pus from which has inoculated the epidermis, acneiform folliculitis, vesicles, eczematoid or pityriasic patches, pemphigus, ulcerating or papillomatous lesions of the mucosa; lesions of the muscles, bones, synovial membranes resembling syphilitic or tuberculous gummata, etc. It is not necessary to describe in detail each of these lesions, the name of which is alone sufficient to denote its appearance; it is enough that the clinician should know of their existence. Whatever be its situation, its size, or its tendency, "the gumma always remains as the fundamental lesion, and

this constitutes the unifying factor between the different forms of the mycosis."

4. Localized sporotrichosis; Sporotrichotic chancre; Lymphatic sporotrichosis; Sporotrichotic adenitis.

In the localized forms the sporotrichum penetrates by a cutaneous lesion, at the site of which it produces an initial lesion or portal of entry, which we have called the "sporotrichotic chancre." Then it gradually invades the lymphatics, and we find a hard lymphatic cord studded with gummata identical with those of disseminated sporotrichosis—that is, the centripetal gummatous lymphangitis. Sometimes the lymphatic glands of the region react, but the sporotrichotic enlargement of the glands is not constant. The disease remains localized to the region primarily affected. As a general rule, one finds the chancre from which the lymphangitis proceeds, but the lesion of entry may remain undiscovered, and the sporotrichosis may be reduced to a more or less extensive gummatous lymphangitis. More rarely there is no appreciable lymphangitis to be felt, and one is able to determine only the initial lesion and the swelling of the glands. More rarely still, there is no appreciable reaction of the lymphatics or the glands, and the initial lesion is the only manifestation of the disease. These localized forms have been observed on the head and limbs. On the face all points may be affected. The initial lesion resembles those verrucose or papilliform tuberculides which so often mark the entry of the bacillus of Koch. It may be moist and fungating, crusted and protuberant, verrucose and dry.

Two cases of sporotrichosis of the eyelids are known. In one there was a soft and fungous swelling of the lower eyelid; in the other, ulceration of the free border of the upper eyelid and small palpebral intradermic abscesses.

In almost every case a centripetal gummatous lymphangitis with adenitis follows a chancre. In one of our cases a papillomatous patch of secondary infection developed in the neighbourhood of the first lesion.

Ascending Sporotrichotic Lymphangitis of the Limbs.—The lymphatic cord is broad, not very painful, and more or less indurated. In Case No. XIII there was no apparent portal of entry, but most often the lymphatic cord starts from the initial lesion, which is sometimes an ulceration and sometimes a verrucose patch. Along its length one finds cicatrices, abscesses, fistulae, and gummata suppurating or still hard. The glands are generally swollen, and in one case of subacute abscess in the groin Josset-Moure obtained, by inoculating media directly from the gland, pure cultures of *Sporotrichum beurmanni*.

We know also of secondary sporotrichotic lymphangitis. In the course of an old disseminated sporotrichosis it is not infrequent for a suppurating gumma to infect the lymphatics and set up an ascending lymphangitis, presenting the same characters as the others. But there is only one case on record, that of Bonnet, in which sporotrichosis, having commenced as an ascending lymphangitis of the arm, has been disseminated to the rest of the body. "The parasite may therefore, though *this is exceptional*, leap over the barrier of the lymphatic glands, diffuse through the venous circulation, and then be disseminated by the arterial stream all through the organism."

The Extra-cutaneous Localizations of Sporotrichosis.—The extra-cutaneous lesions of sporotrichosis may be isolated, and in that case they are very difficult to identify, but they are almost always associated with subcutaneous and cutaneous gummata, whose presence much facilitates the diagnosis.

Sporotrichosis of the Mucous Membranes.—In our patient No. IV, who had suffered for a considerable time from ecthymatous sporotrichosis with subcutaneous gummata, the whole throat was red and painful, and there was a small, almost indolent, ulcer, covered by a pultaceous slough. A smear on a slide showed very numerous short sporotrichs, and cultivation gave numerous colonies. Several months after the ulceration and the sore throat had healed, the sporotrichum was still found as a saprophyte in the bucco-pharynx. The patient, therefore, continued to be a sporotrichum carrier. One may well suppose that the recurring sore throats to which he was subject before having his first gummata were already sporotrichotic in nature, and were the source of the infection of the blood, and it is certain that a sporotrichotic laryngitis which developed a long time after the disappearance of the angina, had its origin in this saprophytism. In a female patient, whose case was studied by de Beurmann, Gastou, and Brodier, and on whom a *post-mortem* examination was conducted by Letulle and Debré, seven months after the appearance of a cutaneous and subcutaneous gummatous, disseminated, ulcerated, and tuberculoid sporotrichosis, a very painful laryngitis developed rapidly. On laryngoscopic examination the larynx was found to be covered by large papillomatous vegetations. The cutaneous lesions subsided, but the lesions of the mucosa, arrested at first by iodine treatment, gained the bucco-pharynx, the base of the tongue, the velum palati, and all the upper part of the trachea. The invaded surface was projecting, vegetating, and of a dirty yellowish-grey colour, and was covered by mucopus, but without any false membrane. This granular wound, in spite of its extent, had remained pliable, and the organs affected were neither deformed nor mutilated.

There are, therefore, two varieties of sporotrichosis of the mucous membranes—an erythemato-ulcerating form and an ulcero-vegetating or papillomatous variety. In the presence of lesions of this kind, which formerly did not even excite suspicions of a possible mycosis, one should always make a cultural test.

Sporotrichosis of the Muscles.—Sporotrichotic gummata may develop in muscle like syphilitic gummata. They may be contemporary with cutaneous and subcutaneous gummata, but there are cases in which a muscular gumma was the sole lesion due to sporotrichosis.

Osteo-articular Sporotrichosis.—The localization of sporotrichosis in the bones and joints has rendered it as much a surgical as a medical disease. The lesions may simulate osteo-periostitis of syphilis or chronic osteomyelitis. A hypertrophic osteitis may be produced. I have seen an abscess, primarily intra-osseous—a true osseous gumma—which was the only manifestation of sporotrichosis. The lesions were situated almost always on the tibia. Three cases of spontaneous fracture, due to sporotrichosis, are on record. The diagnosis of the lesions which we have just enumerated is easy when they are associated with other local manifestations in situations where one is now accustomed to recognize the disease. It is more difficult when the osteitis is isolated. They may remind one of tuberculosis, of osteomyelitis, and syphilis. But there is generally in the appearance, the situation, the very gradual progress of the lesions, some unusual feature which attracts the attention. One may think, when an intra-osseous lesion is in question, of a metastasis from a malignant tumour, and arrive at the conclusion that there is a cancer latent somewhere. It is therefore necessary to look for the *Sporotrichum beurmanni* in all the varieties of subacute and chronic osteitis.

Sporotrichosis of Synovial Membranes.—Sporotrichotic synovitis may resemble acute micrococcal synovitis, subacute gonococcal synovitis, and chronic tuberculous synovitis. In the presence of every synovitis, acute, subacute, and chronic, one ought now to think systematically of a possible mycotic infection.

Articular Sporotrichosis.—Moure has published an excellent case of hydrarthrosis of the knee of sporotrichotic origin, accompanied by an ascending lymphangitis. In a case of Landouzy and Gougerot there was osteo-arthritis of the elbow. Nothing indicated clinically the mycotic nature of the lesions. Sporotrichotic osteo-arthritis ought, therefore, to be more common than the small number of cases published would seem to indicate. It is probable that the cases recognized would increase in number if surgeons would look for the mycosis in all cases of arthritis, even in those which appear to them to be most manifestly gonococcal, syphilitic, or tuberculous.

In this way one will avoid performing amputations or resections on patients who, thanks to an exact diagnosis, will have recovered in a few weeks by the simple ingestion of iodine.

Is it necessary to recall the fact that the three cases quoted by Duque, and affected with the sporotrichosis of Schenck, had undergone, in the first two cases, a double amputation of the thigh, while the third had had the forearm amputated; that the patient of Jeanselme and Paul Chevallier, affected by the sporotrichosis of Jeanselme, had undergone an amputation of the thigh for sporotrichotic lesions, and that, in spite of these interventions the affection continued to progress, and was only cured by

potassium iodide? These unfortunate examples demonstrate once more the great practical importance of a diagnosis of this mycosis.

Ocular Sporotrichosis.—The ocular varieties of sporotrichosis are multiple. Conjunctival sporotrichosis is almost always primitive. The injected mucosa is studded with follicular granulations which form little yellow points more or less irregular in contour, and from 1 to 2 mm. in diameter. These are in reality little gummata which may ulcerate. Enlargement of the preauricular gland is the rule, and it generally persists for some time. Inoculation of the lacrymal secretion gives cultures of the sporotrichum and confirms the diagnosis.

Sporotrichosis of the Epididymis.—Suppurative sporotrichotic orchi-epididymitis has been observed twice in man. This localization is frequent in the experimental sporotrichosis of the rat, produced by the intraperitoneal inoculation of the *Sporotrichum beurmanni*, and I have shown along with Gougerot that this experimental orchi-epididymitis could be employed in case of need for the diagnosis of sporotrichosis, as it is for that of the infection of glanders.

Renal Sporotrichosis.—There has been a single observation of sporotrichotic pyelonephritis in a human being while pregnant. The diseased kidney was removed, and cultures revealed a sporotrichum. Some months later the patient had a subcutaneous sporotrichotic gumma.

Pulmonary Sporotrichosis.—Only two conclusive observations on pulmonary sporotrichosis, with bacteriological proofs, have been published. It is self-evident that a positive culture from the sputum of a patient does not indicate a sporotrichotic pulmonary lesion, since the fungus may be a saprophytic parasite of the buccopharynx, and contaminate the sputum secondarily. One must only accept as facts those cases demonstrated by direct culture from the visceral focus implicated.

We know how numerous the known localizations of sporotrichosis already are. My *experimental researches*, made in collaboration with my disciples Gougerot and Vaucher, indicate that these situations ought to be still more varied, and that their number will increase as it becomes the custom to look for the sporotrichum in a systematic manner in the lesions of all the organs.

The Evolution of Sporotrichosis.—The evolution of sporotrichosis is almost always very slow and chronic. The general condition, good or only moderate before the mycotic infection, is slightly modified by it, and the cutaneous, muscular or osseous lesions constitute the whole malady. Each of these lesions remains, as a rule, indolent and "cold" during its whole course. Chronic forms of sporotrichosis are much the most frequent. The period of incubation, which is generally latent, is of very variable duration. In one of our patients it was twenty days, and in another three months.

The onset is slow and insidious. The gummata appear one by one, and one only discovers them by accident. Sometimes even the first nodule precedes by several months the appearance of the other lesions. Sometimes it is short, and the eruption of the gummata takes place simultaneously. The progress is generally slow, and the disease is prolonged for months and years if its nature is not recognized and appropriate treatment applied.

Sporotrichosis with Anaemia and Cachexia.—In certain rare cases the pallor, loss of flesh, and condition of fatigue of the patient show the systemic intoxication of the organism. Cases of death are exceptional, and may be due to the invasion of the larynx or to the number and widespread nature of the lesions, but almost always, when the patient succumbs, death is caused by an intercurrent affection, which is most often tuberculosis, and not by sporotrichosis.

Acute Febrile Sporotrichosis, with Successive Outbreaks.—In exceptional cases sporotrichosis may assume the features of an acute infectious disease. It then resembles a coccal septicaemia, with cutaneous metastases. The lesions appear rapidly and simultaneously. The temperature rises to 38° or 39° C.; there are shivering fits, attacks of nausea, and epistaxis. Each outbreak of gummata probably corresponds to a release into the blood stream of the parasite.

Acute Inflammatory Sporotrichomata.—It may also come to pass that in the course of a sporotrichosis which is following its usual evolution one or two lesions only assume the characters of an acute abscess, in contrast to the other slowly developing gummata which the patient presents. The polymorphism of sporotrichosis is therefore very considerable. Like the bacillus of Koch and the treponema of Schaudinn, the *Sporotrichum beurmanni* can give rise to the most different lesions. We must not, therefore, arrest our investigations at a study of the form of the lesions, but endeavour in every case to find out their prime cause. It was in the thorough study of a difficult case that I discovered the *Sporotrichum beurmanni* for the first time, and it was while subsequently looking for this pathogenic agent in a large number of doubtful cases of different appearance that I established the existence of sporotrichosis.

THE DIAGNOSIS OF SPOROTRICHOSIS.

Clinical Diagnosis.

The resemblance of sporotrichosis to the affections whose appearance it imitates is so great that clinical diagnosis is often a matter of difficulty. The gummatous, disseminated, non-ulcerating variety resembles syphilis, tuberculosis, leprosy, and even lipomatosis. The disseminated, gummatous, ulcerating variety resembles tuberculosis. The chancre and the sporotrichotic lymphangitis resemble tuberculosis, syphilis, ecthyma, and even glanders. Sporotrichotic osteitis has been confounded with tuberculous and coccal osteitis, etc. An acute sporotrichoma may be taken for an acute streptococcal abscess, an acute febrile sporotrichosis for a coccal pyaemia, and we quote only the most striking confusions. The mistakes made in time past must have been innumerable. They were all the more inevitable since sporotrichotic lesions rapidly get well under iodides, as tertiary syphilides do, and since they slowly improve under the influence of syrupus iodotannicus, as cutaneous and osseous tuberculosis does. Clinical diagnosis is, however, often possible, and so early as 1906 I made it in my clinic at the Hospital St. Louis.

The following are the characters which permit us to recognize the manifestations of sporotrichosis:

The large number of lesions, contrasting with the preservation of a good general state of health.

Partial cup-shaped softening of a node, which is at first indurated, and of which the centre breaks down.

Slight ulceration, which enlarges secondarily.

Irregular and violaceous edges, almost always undermined, covering subcutaneous recesses, in which pus accumulates.

The contrast between the small area of the ulceration and the size of the gumma from which it arises.

The co-existence of several contiguous ulcerations, separated by a slender bridge of violaceous skin, over one and the same gumma.

Viscous pus, or lemon-yellow serous discharge.

The ease with which autoinoculation occurs.

"Cold" and indolent evolution.

The cicatrization of the skin, in spite of the persistence of an abscess under the cicatrix.

Smooth elastic cicatrices, with irregular edges, and often with denticulation of badly attached cutaneous tags surrounded by a brown pigmented area.

The constant absence of enlarged glands.

If a patient in whom such symptoms have made one suspect sporotrichosis recovers very rapidly under iodine treatment, local and general, the diagnosis is almost certain, and the physician may finally content himself with this clinical quasi-certainty.

Up till now, however, I have only accepted as genuine cases those in which the sporotrichum has been demonstrated bacteriologically. Moreover, the bacteriological diagnosis is so simple, even in the absence of a laboratory, that one can and ought always to make it.

Bacteriological Diagnosis.

Direct examination for the parasite in the pus, and in pieces removed for biopsy, which, at a first glance, would seem to be the most simple and rapid method, is tedious and difficult, for most often the parasites are scarce, and when one discovers the short oblong forms which they assume *in vivo*, one has difficulty in distinguishing them from the débris of broken down leucocytes, or red corpuscles, or degenerated protoplasm. If, as a rule, these parasites are Gram-positive, more often still in man they

have no special selective affinities for dyes, and they are reduced to an "unstainable shadow," acidophile, and which does not stand out in contrast with the rest of the preparation. This direct examination for the parasite is not a practical procedure, but it is wrong to say, as some have made out, that one cannot discover the parasite by direct examination of the pus.

Inoculation is an exceptional diagnostic procedure. It can hardly do more than prove the pathogenic *rôle* of the fungus cultivated. The inoculation is made into the peritoneal cavity of the mouse, or, better, of the male white rat. Shortly after the inoculation a characteristic orchitis develops, in the lesions of which the parasite is very abundant, and very easy to recognize by direct examination and by culture.

1. Culture in the cold on glucose peptone gelatine is the first procedure to which one should always have recourse. My researches with Gougerot have established the principles of the technique of cultivating in the cold on glucose peptone gelatine, by the adoption for sporotrichosis of the results of the brilliant researches of Sabouraud on ringworm. This method of diagnosing sporotrichosis, which is universally adopted to-day, and to which we have been asked to give our names, has placed within the reach of every practitioner, even at a distance from a laboratory, and not provided with a microscope or incubator, the exact diagnosis of sporotrichosis.

The technique is of the simplest.

After washing the skin with tincture of iodine, the closed lesions are punctured with a Pravaz syringe, armed with a long needle, and free from all traces of antiseptics.

In the case of an ulcerated lesion the pus is aspirated into a sterile pipette, without washing or the previous use of any antiseptic. The ulceration having been evacuated is then washed with boiled water. After kneading the ulcer it is of advantage to take a further supply of serum, which should be inoculated into a fresh tube.

The fluids collected are poured over the surface of three tubes of glucose peptone gelatine with the syringe or pipette. The inoculation ought to be a copious one. It ought to amount to at least half a cubic centimetre of pus, and, if it can be managed, a full cubic centimetre in each of the three tubes. The inoculated tubes should be placed erect in such a way that the pus or water of condensation will not wet the cotton-wool with which the tube is closed. It is not necessary to close the tube with an india-rubber cap. The tubes, without rubber caps, are left at the temperature of a room which in winter should as far as possible be warmed, and kept away from the vapour of formalin and other antiseptic agents. The incubator does harm, and should not be employed.

From the fourth to the twelfth day, according to the temperature of the room, the colonies of sporotrichum develop, at first as white, then brownish, then chocolate-brown colonies. They are quite characteristic, in virtue of their colour, and their folds, which are analogous to the folding of the cerebral convolutions, and by the areola which surrounds them. The macroscopic appearance of the culture on glucose peptone gelatine is in itself pathognomonic, without it being necessary to make any microscopical preparation.

It is sufficient once to have seen a culture of the *Sporotrichum beurmanni* to recognize it immediately. It is not necessary to have any special bacteriological knowledge. One can hasten the diagnosis by the artifice of flowing the pus on to the dry glass.

On the day on which the tubes are inoculated it is enough to let a large drop of the pus flow into each of the grooves which are formed at the point of junction of the wall of the tube and the medium, and also on the glass opposite the medium. From the second day onward, without making any preparation, we examine with the microscope, through the wall of the tube, the nascent colonies in all of these grooves. The oblong sporotrichum swells and grows. It sends out filamentous, hyaline prolongations over the wall of the tube. From the fourth day there is formed a parasitic star, more or less ramified, and corolla-like. If one can see these filamentous forms, which are not slow to sporulate, the diagnosis is assured.

2. A second technique is the mycotic sero-diagnosis of Widal and Abrami. Sero-diagnosis is a general method which is applicable not only to the diagnosis of sporotrichosis, but also to that of actinomycosis, and allied mycoses, hemisporosis, etc. It allows us to make an immediate diagnosis the very day we examine the patient, while the cultural method requires several days to give any response. It also allows us to make a diagnosis in a case in which direct examination and culture do not give us any definite result, or in which they cannot be carried out in consequence of the situation of the focus of infection. This method, less simple and less easy than culture in the cold, may still be of great service.

Sero-diagnosis makes use of two techniques:

1. Sporo-agglutination.
2. Mycotic reaction of fixation.

It requires a small laboratory.

1. The technique of sporo-agglutination is that of Widal's sero-diagnosis of typhoid fever. The sole difference is in the preparation of the microbic emulsion, which, in this case, is a homogeneous emulsion of *Sporotrichum beurmanni*, filtered in such a way as to contain only free spores. Marked sporo-agglutination confirms the diagnosis. In practice only the serums of sporotrichotic patients agglutinate at high dilutions—1 in 400 to 1 in 500 on an average.

Sporo-agglutination permits not only the diagnosis of sporotrichosis in the active state, but also the retrospective diagnosis of sporotrichosis. We should bear in mind that the serum of patients affected with other mycoses can agglutinate the spores of the sporotrichum, but at more feeble dilutions than the serum of sporotrichotics, so that these agglutinations do not hinder the diagnosis of sporotrichosis, but serve on the contrary for the diagnosis of a whole group of mycoses, actinomycoses, etc. Even the simple bearers of saprophytic yeasts may react.

2. Mycotic reaction of fixation. Its general technique is that of all the reactions of fixation of Bordet and Gengou, the only particular point being the preparation of the antigen, for which one can utilize all the cultures of the sporotrichum.

The serum of patients affected with certain mycoses (aspergillosis, tinea) does not give fixation of complement with the *Sporotrichum beurmanni* as antigen. On the other hand, the serum of patients affected with actinomycosis, thrush, hemisporosis, discomycosis, gives reactions as strong as the serum of sporotrichotic patients. The reaction of fixation can therefore only give the general diagnosis of mycosis. Its results are less precise than those of sporo-agglutination, but the two procedures lend each other a mutual control.

3. A third technique is the sporotrichotic intradermic reaction. It was discovered by Bruno Bloch of Basle.

Sporotrichosine, prepared and titrated according to our instructions, is a sterilized emulsion of *Sporotrichum beurmanni* in physiological saline. Its injection is, therefore, perfectly harmless. With a Pravaz syringe, about two drops of sporotrichosine are injected into the thickness of the skin of the forearm. In patients with sporotrichosis there is, after the twenty-fourth, and especially about the forty-eighth hour, a very decided reaction. To be positive, there should be produced an indurated nodule of at least 5 mm. in diameter, with a broad, reddish oedematous areola, measuring 3 to 7 cm. in diameter.

The indications given by the intradermal reaction must be discussed. A negative reaction permits us to eliminate sporotrichosis. A positive reaction may indicate the diagnosis of sporotrichosis, but never enables us to affirm it with certainty, for it may be positive in patients whose cutaneous lesions are not sporotrichotic. The patient who gives the reaction may be simply a sporotrichum carrier, without sporotrichotic lesions. He may be affected by another mycosis; he may be simply a myco-carrier, and it may even be impossible to discover any fungus about him.

The intradermic reaction can, therefore, only act as an aid in clearing up the diagnosis. It deserves to be employed because of its simplicity, but it cannot be substituted either for sporo-agglutination, or for the fixation reaction of Widal and Abrami, or, above all, for the culture in the cold on glucose peptone gelatine of Sabouraud, in accordance with our technique. This method, which requires neither laboratory nor special knowledge, is that to which we should always have recourse when we suspect sporotrichosis.

PROGNOSIS AND TREATMENT.

When the physician who is acquainted with sporotrichosis has thought of this affection in examining a

doubtful case, when the clinical examination has led him to believe that he has to deal with this affection, and when culture in the cold on glucose peptone gelatine, supported as required by other bacteriological procedures, has confirmed the diagnosis, recovery is as a rule only a matter of days.

As I have pointed out ever since 1906, the evolution and prognosis of sporotrichosis are almost entirely bound up in the diagnosis; the indication is iodide treatment, general and local, and its action is marvellous.

A sporotrichosis undiagnosed lasts, as a rule, for an indefinite period, unless the physician prescribes potassium iodide on the hypothesis that the case is syphilis, or unless he treats the patient by means of syrupus iodo-tannicus, by syrup of the iodide of iron, and by local applications of tincture of iodine to combat a so-called tuberculosis.

A diagnosed sporotrichosis is almost always a very benign affection, which is readily cured in four to eight weeks. The only exceptions to this general rule are furnished by those cases in which the sporotrichum has invaded the mucous membranes of the pharynx and the upper air passages; by those in which the mycosis develops on a cachectic soil, and in particular on a tuberculous soil; and finally by those patients who are intolerant of the iodides.

These cases apart, the treatment of sporotrichosis is very simple. Potassium iodide should be administered internally in increasing doses, as high as 6 grams a day and even more, and the local lesions should be dressed with a weak iodo-iodide solution—Aquae 500 grams, pot. iod. 10 grams, iodi 1 gram. Finally the ulcerated points should be cauterized with tincture of iodine. The prolongation of general treatment for a month after complete apparent recovery is indispensable to prevent relapse and recurrences. When the patients are partially intolerant of iodides, one gives by the mouth the maximum tolerated dose of iodide, lessening the inconvenience of the remedy by the classic artifices of a milk diet, bitters, belladonna, etc., and one completes the dose by using iodide washes. When patients are completely intolerant of the iodides, the succedaneous iodides should be tried; the albuminous iodides—iodo-maisine, sajodin, etc.—by the mouth, and iodine oils, lipiodol, iodipin, etc., in intramuscular injections.

Incision of the abscess is harmful, and surgical treatment, total excision, curetting, destruction by the thermo-cautery, ought never to be employed except in the very rare cases in which the iodo-iodide treatment is impossible.

The physician who knows how to recognize sporotrichosis has, therefore, not only the satisfaction of making an exact and incontestable diagnosis, but he has the much greater satisfaction of being able to reassure his patient as to the future and of prescribing for him a treatment which will cure him with certainty in a few weeks.

THE TREATMENT OF NAEVI, BASED ON MORE THAN TWO THOUSAND CASES.

By J. L. BUNCH, D.Sc., M.D., M.R.C.P.,

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DURING the past five years I have treated a large number of naevi, especially at the Queen's Hospital for Children, where more in-patients are annually admitted and more out-patients seen than at any other children's hospital in London, the number of new out-patients last year being well over 32,000.

The older methods of treatment of naevi are well known—excision, the application of caustics, vaccination at the site of the naevus, electrolysis, the cautery, and, more recently, radium and radio-therapy. For certain forms of naevus, in which the naevoid element co-exists with a large amount of lipomatous tissue, the so-called naevo-lipomata, excision is still the quickest and perhaps not an unsatisfactory method of treatment, especially when the swelling is situated elsewhere than on the face, and a linear scar is no disfigurement. If the stitches are removed on the third or fourth day the resulting scar is very slight, and after a few months becomes more or less inappreciable. Caustics, such as nitric acid, I never now employ, nor do I think that it is justifiable to recommend vaccination, since it is impossible to regulate the extent or the character of the resulting scar. Electrolysis is especially suitable for small stellate naevi in adults, who either for reasons of business or pleasure object to any sore place on their face, even for a few days. In such patients it is quite possible to destroy a stellate naevus the size of a small coin at several sittings without causing any even temporary disfigurement which cannot be hidden by a little boracic powder so completely that it will not be noticed. Electrolysis is also well suited for those cases of deep cavernous angiomata which are situated beneath the skin, and cause either no discoloration of the skin, in spite of the swelling, or only a slight purplish tint (of the overlying skin). Electrolysis by means of a bipolar electrode will cause very marked diminution or even disappearance of such tumours, with only small scars where the needles were inserted, and the purplish discoloration on the surface can be removed by other means. I have, however, seen keloid, or rather hypertrophic scarring, follow at the point of insertion of the electrodes, with somewhat unsightly results. This seems more likely to occur when the needles are not coated with shellac to within a short distance of the point.

The cautery I used to employ in a considerable number of cases, but when the naevus is of any considerable size, and presents a raised, red, angiomatous swelling, it is difficult to regulate the heat so that the glowing point does not cut into a biggish vessel or blood space, and cause haemorrhage, which delays the operator and is seldom of benefit to a patient only a few days or weeks old. In the case of small pigmented naevi this trouble does not, of course, arise, and the cautery is for them both rapid and efficacious.

If it is thought necessary to use a local anaesthetic before employing the cautery, I would strongly recommend the subcutaneous injection of eusemin, adrenalin and eucaine, or some such substance, in preference to the use of ethyl chloride, at any rate of some brands, for I have seen a patient's head enveloped in flames when the cautery was used after a naevus on the face had been frozen in this way.

Radio-therapy has been recommended by some dermatologists, but a single dose of x rays sufficient to obliterate a naevus is occasionally followed by ulceration, and repeated doses, used as they sometimes are for intractable port-wine stains on the face, are very likely to lead to disfiguring telangiectases, even if they improve the naevoid condition. Kromayer's quartz lamp has not proved very successful in my hands. It should be applied quite close to the face for ten minutes, and some hours after the application the naevus becomes markedly inflamed and erythematous. Under cooling dressings this condition disappears in about ten days or a fortnight, and the vessels, which have probably thrombosed, tend to shrink and disappear, leaving in favourable cases a condition of the skin which is much paler and whiter than before treatment.

Radium treatment of naevi has the disadvantage of being costly, but with a plaque of two million activity, or even half this activity, some excellent results may be obtained in the case of port-wine stains. Unfortunately, the naevus of this type is usually very large relatively to the size of the radium applicator, and therefore a very lengthy treatment is necessary in order to produce a satisfactory result. For raised angiomata, radium treatment is inferior to the methods of which I am about to speak.

Without question the greatest advance during recent years in the treatment of naevi has been the introduction as therapeutic agents of solid carbon dioxide and liquid air. For rapidity of action, effectiveness, comparative painlessness and cheapness, it will be a long time before we find anything better for treating both superficial and deep naevi, and a somewhat prolonged acquaintance with their use tends to emphasize rather their capabilities than their limitations. The great majority of cases which I have treated have been children, many of them only a few weeks old, and in such patients the painlessness and rapidity of any method is of great importance. The application is of course cold, and a tiny baby will probably cry, but I doubt if it feels any definite pain, and older children will talk and laugh while they are having several naevi, warts, or lupus nodules treated by this method. They say there is some feeling of burning or smarting while the tissues are thawing, but this soon passes off.

When a well-marked, definitely-raised, and circumscribed angioma has to be treated, a single application is seldom sufficient, and I very much prefer to do too little at a first application rather than too much, especially if an eyelid or the buccal mucous membrane is involved. But even if several applications are necessary, it must be remembered that the inconvenience to the patient is very slight, no anaesthetic is necessary, and no dressings beyond some boracic powder or zinc ointment are required. For naevi on the face there is no question that this method is far preferable to any surgical operation; for naevi on the trunk and limbs it might be said that excision is equally good and that the scar does not matter, but I have seen a considerable number of such scars in which naevoid tissue has been left or has recurred, and where either a further excision or treatment by solid carbon dioxide or radium was necessary.

The application to the skin of either liquid air or solid carbon dioxide for a few seconds causes a preliminary freezing of the tissues followed by a well-marked inflammatory reaction, which, according to its intensity, may result only in thrombosis of the superficial vessels and fibro-plastic sclerosis of the epidermal tissues, or any stage between this and complete necrosis. The action differs from that of the cautery or a caustic in that all the tissue elements frozen are not indiscriminately destroyed, and the resulting scarring is, owing to the gradual transformation of the tissue elements into fine fibrous tissue, much more supple and inconspicuous than when these other methods of treatment are employed. Moreover, the exact amount of inflammatory reaction can be controlled, both as regards extent and depth.

There is little appreciable difference in the nature of the inflammatory reaction produced by liquid air and solid carbon dioxide, but inasmuch as the former is very much colder, it can produce the same reaction in a considerably shorter time, and a larger area can be frozen with a single application. In the liquid state air occupies $\frac{1}{800}$ part of its ordinary volume; in other words, if liquid air be vaporized it will expand 800 times, and as the more volatile nitrogen evaporates the temperature rises and the almost colourless liquid assumes a bluish tint—the colour of liquid oxygen—which remains until all the liquid has vaporized. Liquid air boils at −190° C., so its use is especially adapted to those cases where a maximum rapidity of action is necessary and the maximum degree of cold is required in the minimum time. The results obtained in America by Trimble and Dade, Hartzell, Hubbard and others, have caused a large amount of attention to be paid to its possibilities as a therapeutic agent in skin diseases, and have shown how large a field is open for its use. The late Dr. Radcliffe Crocker was the first in this country to show cases successfully treated with liquid air, and, as his assistant, I had the opportunity of watching his results, and during the past five years I have treated a number of cases of angiomata and other skin affections with liquid air. Liquid air is, of course, a fluid which evaporates with great rapidity when exposed to the atmosphere, and it must therefore be contained in a Dewar flask, but in such a flask it can be transported anywhere and remains practically unchanged for many hours. But, inasmuch as it is a fluid, it is not so easy to apply it exactly to a small area; it cannot of course be sprayed on the lesion and it must not be allowed to touch healthy skin. The best way to apply it is to make a swab of absorbent cotton of the same size as the naevus, to attach it to the end of a stick of wood and dip it in the flask of liquid air. The liquid air has a temperature of 190° C. below zero, so freezing of the skin is very rapid. Its action can be regulated both by the time of application and the amount of pressure employed. For a capillary naevus or a port-wine stain firm pressure for five to seven seconds is sufficient, for cavernous angiomata nine to ten seconds is usually necessary. Lupus vulgaris, chronic patches of eczema, or lichen planus can be treated in the same way, and excellent results can be obtained in cases of lupus erythematosus. Naevi often require more than one application; indeed, it is wise to do too little rather than too much, and to be content, in the case of a port-wine stain, with a moderate diminution of the colour after each application of the liquid air. There are unfortunately port-wine stains the colour of which is so intense and which involve the deeper tissues to such an extent that no method at present at our disposal is capable of doing more than diminish the disfigurement without running the danger of unsightly scarring.

Unless several cases can be treated on the same day the expense is quite appreciable, as liquid air costs 15s. a flask, in addition to the cost of a special messenger from the factory. When the naevus is not large and rapidity of freezing is not of importance, a much cheaper method is to use solid carbon dioxide, and this has lately been very extensively employed, not only for naevi, but also for many other skin lesions. The temperature of solid carbon dioxide is only −78.2° C., as compared with −190° C. for liquid air, if not nearly so cold, it can be much more easily handled, it can be made into sticks of any shape to fit a naevus, and it can be prepared rapidly without any special skill being required. A large cylinder of the gas can be bought for a few shillings and will last a long time, or quite small cylinders can be obtained for preparing the substance at a patient's house.

The chief essental about the stick of carbon dioxide when ready for use is that it shall be very hard; in my opinion it should be so hard that it sinks in water, and it can then be cut or moulded to a point so fine that a naevus no bigger than a pin's head can be frozen and removed without any involvement of healthy skin. Naevi of the size of a florin can similarly be treated with a single application, and any lesion between these sizes, however irregular in shape. For larger lesions, two or more applications, approximating but not overlapping, are necessary, and it is then best to use a square stick in order to secure accurate co-aptation of adjoining areas. I find it convenient to have a second smaller stick, pointed at one end, ready to apply to the peripheal irregularities of any naevus larger than an inch in diameter. I make a practice of freezing right up to the edge of the naevus, or even $\frac{1}{16}$ in. beyond it, for nothing is more tedious than having afterwards to go all round the periphery with a fine point, destroying small portions which have been missed at the first freezing. The immediate effect of the application is to make the skin perfectly hard and white, depressed below the surrounding skin proportionately to the amount of pressure which has been applied. This pressure must not, when soft parts underlie the angioma, be greater than that required to press the blood out of the surrounding vessels, and the surface of the skin must be held as tense as possible during the application; where bone immediately underlies the lesion, somewhat firmer pressure may be made, remembering that the depth frozen depends, other factors being the same, upon the amount of pressure applied.

The duration of the freezing necessary can only be estimated from previous experience. In a baby a few days or weeks old a very much shorter time will suffice than in an adult. I find that a second freezing of, say, ten seconds after the tissues have thawed out will produce a greater effect than one continuous freezing of twenty seconds, but in warty growths it is sometimes necessary to give as much as two consecutive freezings of sixty seconds each before a sufficient reaction is produced. The time required for thawing is rather longer than that for freezing; the skin then feels firmer, due to secondary hyperaemia and extravasation of serum, and within an hour or two a vesicle or bulla forms. Unless the application has been extremely short, this vesicle does not become absorbed, and if not repeatedly punctured with aseptic precautions and drained it becomes infected. If possible, therefore, the fluid should be evacuated aseptically each time the bulla fills up, and a pad of sterilized cotton-wool is, under such circumstances, all the dressing required. When, however, such draining cannot be carried out efficiently, a dressing of zinc ointment should be applied until the scab comes away. This takes place in about ten days, and a delicate, smooth and supple cicatrix forms, which is at first pink, but later becomes paler and paler, until it is almost invisible. The resulting scar may at first be slightly depressed below the level of the surrounding skin, according to the nature of the lesion which has been treated and the extent of the freezing, but the scar becomes finally of the same tint as the healthy skin, equally soft and practically inconspicuous.

In the case of cavernous and pigmented hairy naevi and raised localized angiomata, excellent results are also obtained, but more than one application is usually necessary,

and the scar, although delicate in texture and supple, is more conspicuous in proportion to the depth and extent of the original lesion and the number of applications made.

During the past two years and a half I have treated over 2,000 naevi by solid carbon dioxide, apart from other skin diseases. For stellate, capillary, cavernous, and flat pigmented naevi the method is excellent, and gives most satisfactory results. For linear naevus and naevus verrucosus, where there is much thickening and warty growth, it is not so good, but these cases are, of course, very rare. For port-wine stains (*taches de feu*) it depends how far the corium and underlying structures are involved; the most unsatisfactory cases are port-wine stains with a nodular, irregular surface and warty projections, and for these there is no really satisfactory method of treatment. But for the vast majority of naevi there is no more effective, satisfactory, and painless remedy, nor one which gives such uniformly good results.

DISCUSSION.

Dr. STOPFORD-TAYLOR (Liverpool) considered liquid air of much utility in many forms of naevi. When CO_2 was used, he had noted the occurrence of erythematous rings around the moles treated, but did not know whether these occurred more commonly in children than in adults, nor how long they persisted.

Dr. BARENDT (Liverpool), when dealing with pigmented moles, preferred electrolysis; mere removal of the hairs sufficed.

Dr. GOODWIN TOMKINSON (Glasgow) had found CO_2 useful in the treatment of naevus verrucosus.

Dr. SAVATARD (Manchester) had found radium useful in many cases.

Dr. W. A. LOXTON (Birmingham) raised the question of whether the use of CO_2 diminished or increased a certain tendency towards malignancy that pigmented moles admittedly exhibited at times.

Dr. MACKENNA (Liverpool) said he had tried CO_2 in dealing with port-wine stains, but found it useless.

Dr. BUNCH, in his reply, said that the formation of the erythematous ring mentioned could be avoided by using small repeated doses instead of one large dose, but he had not often seen the ring at all. The time that had elapsed since carbonic acid snow was first used was too short to allow of any statement as to its influence on malignancy being made.

TYPES OF DERMATITIS SEBORRHOEICA.

By G. G. S. STOPFORD-TAYLOR, M.D.Durh.,
Physician, Liverpool Skin Hospital.

No single word in dermatology has been responsible for so much confusion of ideas and such pathological errors as "seborrhoea." I am inclined to think that if the word had never come into use our conceptions of many of the inflammatory dermatoses would not to-day have been in a condition which borders on chaos.

A seborrhoeic skin is a greasy skin, due to an admixture of the secretions from the sebaceous and coil glands. Seborrhoea is a functional disorder which may be aggravated possibly by micro-organisms which I believe to be secondary and not causative.

Let us consider for a moment the causes of a greasy or seborrhoeic skin.

1. There is the structurally seborrhoeic skin. (Congenital.)
2. Puberty, an age at which, simultaneously with the awakening into activity of other glandular functions, there is an increase in the activity of the glands of the skin.
3. (*a*) General debility; and in diseases associated with embarrassment of the circulation, as in pulmonary disease. (*b*) Plethora, as in the engorgement of the circulation in the full-blooded as in the free liver.

A seborrhoeic skin forms a suitable home for the development of the organisms found naturally in the skin, and these not only irritate it, but invade the glands and excite them to further activity. Inflammation is the result of repeated or long-continued irritation; yet we hesitate to speak of inflammation of the integument until its clinical signs are apparent. Thus, pityriasis capitis is non-inflammatory. A degree of pityriasis capitis is common to most people. Are we to assume, therefore, that because a patient is suffering from dandruff all coexisting skin affections are dependent upon his scurfy head? And yet we have witnessed at the same time, and in the same patient, an eczema affecting the suboccipital region and lichenoid or papular seborrhoea over the sternum. The association of these conditions is incontestable, but are there not other factors at work?

Let me illustrate. The infant brought to us suffering from a dry and scaly eczema of the scalp and a red and weeping condition of the face—are the repeated irritating applications of a caustic solution, such as soap, to be exonerated and seborrhoea substituted as a cause?

It is admitted by those who know best that the etiology of psoriasis is unknown. When a patient presents himself for treatment must we conclude that seborrhoea is a cause of psoriasis because he has a seborrhoea capitis?

Seborrhoeic Dermatitis.

I have purposely omitted the so-called seborrhoeic eczema and seborrhoeic psoriasis because of the confusion the term "seborrhoea" has created. The same prominence is now given to seborrhoea as a cause of skin affections as was given to gout twenty or thirty years ago.

In our works of pathology of the skin the only pathological difference between psoriasis and seborrhoeic dermatitis is one of oedema. They are both types of inflammation with imperfect cornification, or, in other words, secondary changes in the epidermis.

Treatment.

The disease may be roughly divided into two classes—namely, acute and chronic. Whilst soothing remedies are suitable for the former, stimulant remedies such as sulphur speedily cure the latter.

Cases.

[The author then related a number of cases of seborrhoeic dermatitis psoriasiformis and seborrhoeic dermatitis lichenoides, types which admit of very little, if any, variation during their course, so that little exception could be taken to the nomenclature.

The following is a list of the photographs shown:

1 and 2. Seborrhoea lichenoides. The eruption in this type of disease is essentially papular. The papules may be discrete, arranged linearly, in clusters, or forming circles or segments of circles, but they are not scaly and in no wise enclosed fawn-coloured areas. The attack was acute, and affected upper half of chest and upper arms and shoulders and back as low down as the inferior angles of the scapulae.

3. The eruption in this case is particularly well marked, the papules being discrete or arranged linearly. In the latter the arrangement appears to follow the direction of the lines of cleavage, the papules appearing on the ridges and corresponding to the openings of the sweat or coil glands. The patient was a particularly hairy individual and had a very greasy skin.

4. The papules are arranged in clusters, and discretely. Many are perifollicular, the pores being quite visible.

5 and 6. Discrete and clustered papular eruption affecting the trunk, front, and back. On the back it will be observed that the eruption presents a triangular arrangement with the base upwards. On the front the eruption is most in evidence at the base of the neck and in the groins.

7 and 8. (7) A greasy papular eruption arranged in disc-like forms in front of the chest; and (8) on the shoulders on a more extensive scale, forming several large, irregular, but well-marginated, greasy and scaly areas. This patient volunteered the statement that, although the eruption had troubled him for years, it was always worse when he had an unusual amount of dandruff.

9 and 10. Another patient with a disc-like arrangement of papules in the sternal and interscapular regions, especially greasy.

11 and 12. A papular eruption on the leg assuming ring-like form and clearing in the centre. This is an unusual position for a seborrhoeic dermatitis. The other parts of the body were free.

13. In this case the lesions are for the most part annular. In the middle line and towards the shoulder-joints the rings have become merged into one another, forming large geographical or map-like areas.

14. Shows the back of the same patient. In this the eruption is almost entirely confined to the convexity of the ribs, as if

some other irritant had played a part, to wit, coarse and unwashed flannel.

15. In this case the eruption is for the most part annular, beginning in the spinal region, and then spreading outwards over the convexity of the ribs. The rings in the middle line have also merged into one another, forming map-like areas.

16. A similar case to the former but not so extensive.

17. Annular seborrhoeide. In this you will perceive that the eruption is almost entirely confined to the face, neck, and upper chest. This type is extremely uncommon on the face, and partakes of the appearance of syphilis.

18. Full face of the same patient.

19. In this the eruption is arranged in clusters, but the shoulders and upper part of the back had been irritated by friction with sulphur ointment, so that the disease had lost its distinctive appearance, a dermatitis medicamentosa having taken its place.

20. This type is distinctly papulo-squamous, with a tendency to ring formation. It occurred in a female child.

21. A psoriasiform type of disease which may be considered very rare. A curious arrangement is seen in the eruption following the convexity of the ribs.

22. In this case we have both types of the disease shown, a psoriasiform eruption on the trunk, and a papular eruption over the hips, and a psoriasiform arrangement on the thighs and legs. I have never seen anything like this before.

23. A typical psoriasis affecting for the most part the interscapular region. I have shown this photograph to contrast the different appearances of psoriasis and seborrhoeic dermatitis annularis. The cause of both diseases is unknown.]

DISCUSSION.

Dr. BUNCH (London) discussed the difficulties of drawing a sharp line between seborrhoeic dermatitis and seborrhoeic eczema, and between seborrhoea and psoriasis.

Dr. SAVATARD (Manchester) thought that the scalp was invariably implicated in all cases of seborrhoeic dermatitis, and that for this reason it should invariably be included in the treatment.

Dr. STOPFORD-TAYLOR replied.

A RATIONAL METHOD OF TREATING SYPHILIS.

By J. E. R. McDONAGH, F.R.C.S.

THIS paper is intended as a plea for a rational treatment of one of the most important diseases which affects mankind. Our shortcomings in the treatment of disease are due to the fact that we pay more attention to the curing of symptoms than we do to eradicating the cause thereof, with the result that if the symptoms reappear we regard such as a fresh attack of the disease rather than a recurrence of the primary infection. How often do we hear that a man has had several attacks of influenza, or again of gonorrhoea! Concerning influenza I am not entitled to speak, but with gonorrhoea the greater percentage of so-called fresh attacks are undoubted recurrences of the primary infection, which we have failed to cure; and no doubt a like analogy exists in the case of influenza. With syphilis we used to go a little further in that we recognized that fresh outbreaks meant recurrences and not fresh attacks. We were not content with the mere disappearance of symptoms, but we advised our patients to take treatment for two to three years, assuring them that if they did so they would be cured of their disease. Men who have had lifelong experience with this method of treatment inform us that over 90 per cent. of cases were really cured.

Now let us think for a moment how a cure was estimated. It was estimated either by the absence of cutaneous manifestations or by the absence of signs typical of a recognized defect—for instance, unequal pupils, loss of knee-jerks, etc. Signs such as just described often point to the defect being a gross one upon which treatment will have little effect, showing that degenerative changes have been going on over a very extended period, which our senses were not trained enough to recognize. As our clinical knowledge increased we became every day more alive to signs dependent upon an old syphilitic infection which were unknown to the old observers; in other words, the sequelae of syphilis have multiplied since the days of Ricord, Fournier, Hutchinson, and others, whose statistics of cures are being continually brought forward, as if they had the same value to-day as when they were first published. Furthermore, no man is capable of diagnosing insidious vascular changes, which lead too often to an untimely death from hemiplegia, aneurysm, etc. Therefore, from clinical evidence alone we were not and never are justified in pronouncing a case cured. Our knowledge concerning late syphilis, apart from our better clinical methods, has had much light thrown upon it by the important serological test which is known as the Wassermann reaction. This test has enabled us to ascertain within certain limits whether a patient is cured or not, and we can use it as a means to regulate our treatment.

In the light of our present knowledge we regard a positive Wassermann reaction as indicating active syphilis. Taking this for the moment to be correct, and putting the test into practice, we find that a large percentage of cases of the so-called cures after mercury give a positive reaction. The minority give a negative, but are we to conclude that such cases are cured? Unfortunately not, since a negative reaction by itself can never more than signify that we are dealing with a latent stage of the disease, or in other words that the spirochaetes are not active enough to cause the formation of a reacting substance, the so-called reagin upon the presence of which a positive Wassermann reaction depends. The position is further complicated by the fact that certain active syphilitic conditions are known for the poor production of reagin which occurs, and which therefore give a negative reaction. The conditions responsible for this are syphilitic infections of the vessels, giving rise clinically to arterio-sclerosis with its sequelae aneurysm, hemiplegia, etc., and cerebro-spinal syphilis.

A patient the subject of cerebro-spinal syphilis most frequently seeks advice for headaches which have resisted ordinary treatment. If the patient has had syphilis a Wassermann test is advised, which is not infrequently negative, so the patient may not be treated with antispecific remedies. In such a case an examination of the cerebro-spinal fluid is essential. The following is an illustrative case.

A patient was sent to me for a Wassermann test, which turned out to be negative. His symptoms were persistent headaches, which he had for three years. He had been obliged to give up his work owing to their severity, and he had spent a small fortune on drugs, spas, electrical treatment, and what not, all without avail. The patient had had syphilis six years previously, for which he took treatment regularly for the three prescribed years. An examination of the cerebro-spinal fluid revealed a slight lymphocytosis, slight positive Nonne-Apelt, and a positive Wassermann reaction. The headaches immediately disappeared under salvarsan.

So much for one explanation of a negative Wassermann reaction. Now for another. Antisyphilitic remedies are parasiticidal; should they be employed in too small doses to kill all the organisms, those organisms remaining are crippled or rendered for the time being inactive. So long as the organisms are dormant, the host has no need to form resisting bodies, with the result that the Wassermann reaction becomes negative, and the patient is in the latent stage. To my mind the latent stage of syphilis is extremely important, since the patient, imagining himself cured, may act as he would otherwise not have done—for instance, marry, and then at the critical moment become actively syphilitic again, infect his wife, and thereby run the risk of having syphilitic children.

Furthermore, there is clinical evidence that a patient in the latent stage may be infectious; one need only mention the numerous cases of women with a negative Wassermann reaction who give birth to syphilitic children with not only a positive Wassermann reaction, but with symptoms of the disease. While on the subject of the significance of a negative Wassermann reaction, mention must be made of the few cases which give a negative reaction in spite of active symptoms. This phenomenon is more commonly met with in syphilitic recurrences than during the stage of the primary general infection, and may be accounted for either by the fact that an antireagin substance has been produced, or that the organisms have become serum-fast.

The latter occurrence would explain why the phenomenon is more commonly met with during the recurrent stage, because protozoa go through stages in the body

from which a new race ultimately springs. This new race can probably inherit a strong resisting power, not only against the host (serum) on which it is parasitic, but also against the remedies used to destroy it. It is well known how much harder it is to cure a patient in the recurrent stage than in the primary stage of general infection, although the number of organisms present must be fewer by millions, otherwise why is it so difficult to find spirochaetes in a gumma? The new race or races become mercury and arsenic fast. Bearing this in mind, do you not see how important it is not only to start your treatment early, but also not to let go of it before your patient is absolutely cured?

Passing on now to treatment, I would like to open with the question, How often is the individual case taken into account? You have all noticed how excellently some of your cases responded to mercury and how intractable others were, and how free of symptoms some patients were, and vice versa, but nevertheless it was three years for all alike.

Some people are no doubt immune to syphilis, others nearly immune, and so on, consequently every case must be treated individually, and no laws made as to how many injections are necessary for such and such a case and such and such a stage.

I saw a patient three years ago with a primary sore on the corona, from which I obtained spirochaetes. I advised him to undergo mercurial treatment, but being annoyed at being told he had syphilis he left me, and I did not see him again for eighteen months, when he consulted me for a similar sore he had on the opposite side of the corona; in the meantime he had taken no treatment. The sore developed after the usual incubation period, and from it I obtained spirochaetes in abundance. On both occasions the Wassermann reaction was negative. After one intravenous injection of salvarsan the sore rapidly disappeared; the patient has developed no symptoms since, and the Wassermann reaction has always been negative. Take, again, two cases in the early secondary stage, with symptoms, period from infection the same—the one will require four injections of salvarsan, while the other will need eight.

I have recently had two cases with gummata on the forehead, other factors the same as far as I could judge. With the one I obtained a negative Wassermann reaction after four injections of salvarsan, and with the other the reaction was still positive even after the tenth. Both had ten intramuscular injections of grey oil.

So much for the inability of being able to estimate how much treatment is required beforehand. Now let us pass on to discuss how we can distinguish a latent syphilitic from a cured one, and how we can estimate the amount of treatment requisite for each individual case. The fact was noticed by several observers that a patient with a primary sore and a negative Wassermann reaction not infrequently gave a positive reaction a week after an injection of salvarsan. Then it struck Gennerich of Kiel and Milian of Paris to use the injection as a test in the later stages, with the result that it was frequently found that a syphilitic with a negative Wassermann reaction quickly developed a positive after the so-called provocative injection. These two observers went a stage further and suggested that in treating the disease so many injections should be given until the reaction became permanently negative.

The provocative injection as the test of a cure and of dormant syphilis is extremely useful, but its limits—namely, as to how far it is influenced by the amount of the previous treatment and the period which has elapsed between stopping the treatment and carrying out the test—are not yet definitely fixed. From my own experience, a positive Wassermann reaction is most likely to be obtained about the forty-eighth hour after the injection. It may be delayed until the seventh or even the fourteenth day, and it may not appear on one of these occasions until after the second injection. The first appearance after the second injection occurs in cases poor in reagin—that is, arterial syphilis, cerebro-spinal syphilis, etc. The fourth chart is a typical case in the latent stage which both demonstrates the effect of a provocative injection and the future course after treatment. You can see how important is this provocative injection. Beside the instance just given (Chart 4) let me cite the case of a woman who begets syphilitic children, but herself gives a negative reaction. In such a case a provocative injection will give rise to a positive reaction, showing that the patient is actively syphilitic and needs treatment.

In how many cases has it been the rule to thoroughly treat the mother of infected children?—in no branch of the disease has treatment been more neglected. So far as the regulation of treatment by the Wassermann reaction is concerned, a few words can sum up the position; and these are that so many injections should be given until the reaction is negative on the day of the last injection. Having made some few hundreds of tests with blood withdrawn at frequent intervals after both salvarsan and neosalvarsan, I have been able to form certain rules which guide me in every case.

In the primary stage it is necessary to test the blood forty-eight hours and the fifth day after the first injection, and if positive on either occasion to repeat the injection on the eighth day. Then it is necessary to test the blood weekly and repeat the injections until the Wassermann reaction is negative on the seventh day after the last injection. When this is the case the patient should only be passed when the blood remains negative, tested weekly, for another month.

Unfortunately, it is rare to get a case so early that the reaction does not become positive as the result of an injection. I have seen such, but think it wiser to give a second injection for safety, and a provocative injection six months or a year later.

When the reaction becomes strongly positive after an injection, and in cases in which it is markedly positive before treatment is commenced, no blood tests need be made until before and after the fourth injection, as in my experience four injections are the minimum likely to be required to produce a permanent negative result.

In the so-called tertiary stage, although it may be possible to obtain a negative reaction, the rule is rather the other way, as in several instances I have failed even with nine to twelve injections. Therefore I tell the patient that a cure cannot be guaranteed, but that he may try if he likes; or I generally advise him to undergo two injections with the idea of healing the symptoms, and not to have any more until symptoms reappear. Naturally circumstances alter cases, and the *pros* and *cons* should be gone carefully into in each one. It is impossible to pen what course one would adopt in every case.

When arriving towards the end of treatment, and when all the reactions are negative, and in cases in which the amount of reagin is normally small—namely, cases of arterio-sclerosis, cerebro-spinal syphilis, syphilitic epilepsy, and hemiplegia—each serum should be tested in gradient increasing strengths. The Wassermann reaction done quantitatively is of the highest importance, and in the case of the cerebro-spinal fluid it is imperative.

It sometimes happens that cases nearing the end of treatment—for instance, after the fourth or fifth injection—give a weak positive reaction only between the third and fourth week, which becomes immediately negative within a few hours of repeating the injection. Therefore, before a patient is finally discharged, a test should be carried out between the twenty-first and twenty-eighth day after the last injection. Such cases usually only require one more injection before the treatment is complete.

Patients who have had syphilis and give a negative Wassermann reaction are either cured or in the latent stage, which of the two can only be ascertained by giving a provocative injection of salvarsan and then testing the blood.

If the previous treatment has been recent—that is, only a few months back—the appearance of a positive reaction may be delayed, or, as happened in several of my cases, was positive in the forty-eight hours blood, and negative again on the fifth or even third day, to become only definitely positive on each occasion after the second injection. I have had two cases in which the reaction was not positive at all until after the second injection—cases of arterial syphilis.

Needless to say, I have made several controls on non-syphilitics, and have never been able to obtain a positive Wassermann reaction, even after five injections.

It has been urged that two injections are always sufficient, and that a negative Wassermann reaction almost always results therefrom.

If two injections of salvarsan are given and two months are allowed to elapse before doing a Wassermann test, most cases will give a negative reaction, not because they are cured, but because the treatment has driven them into the latent stage.

The reason I assert that they are in the latent stage is because so many of my cases have returned months later with symptoms, and because still more have given a positive Wassermann reaction. Further, I have often been successful in obtaining a positive reaction after a provocative injection of salvarsan.

I have seen several cases in the secondary stage return with symptoms within four months after having had three and four injections of salvarsan. The question may now be asked, How do you know you have cured your case when the reaction becomes negative, say, after giving six injections?

The following answers seem to me to settle the point: First, the reaction becomes gradually negative; secondly, the reaction becomes negative quicker, that is, after fewer injections in the primary than in the secondary stage; thirdly, a provocative injection some months later is not capable of giving rise to a positive reaction; fourthly, I have recently undertaken some experiments on patients, the subjects of systemic gonococcal infection, with the idea of estimating the action of vaccines on the complement-fixing power of patient's serum, concerning which I shall soon hope to publish full details, in conjunction with Dr. Klein, who has collaborated with me. The conclusions I will mention here, as they have so much bearing upon the question under discussion, and have thrown a new light upon the action of the specific remedies.

In a gonococcal patient who gives a positive complement fixation test, the reaction will become gradually less after vaccine treatment until it becomes quite negative. When it is negative the symptoms have disappeared, and a provocative injection of vaccine some months later will not give rise to a positive reaction. If the vaccines are withheld before the patient is cured, a provocative injection some months later will give rise to a positive reaction.

Again, a patient with a systemic gonococcal infection with a negative complement fixation test will give a positive test after an injection of a vaccine. The reaction is, as in the case of syphilis, most marked about the forty-eighth hour.

You can see what a close similarity exists between vaccine and drug treatment, and that both act, not so much directly upon the organisms, but indirectly in increasing the resistance of the host by stimulating antibody formation. Further, that antibodies will only be formed while there are parasitic organisms present, so that when the test employed for determining the presence of antibody is negative we can assume that the patient is cured.

As you will have noticed, I have mentioned nothing about the relative merits of neo-salvarsan and salvarsan, or discussed the methods of administering them or the doses employed, or the intervals at which the injections should be given, and how great a part mercury should play in completing the treatment. All this has been fully dealt with in my recent article in the British Medical Journal, June 8th, and still more recently in my book, *Salvarsan in Syphilis and Allied Diseases* (Oxford Medical Press).

Briefly resuming, I am anxious to bring out that every case must be treated individually, and no laws made as to how many injections this or that stage of the disease requires. That a case must be treated as early as it is possible, and that the treatment should not be stopped until the patient is cured. That a cure can only be said to occur when the Wassermann reaction is negative within a short interval of stopping treatment. Finally, that the treatment required can be accurately gauged only by making examinations of the blood at frequent intervals after each injection.

Further advances in the knowledge of syphilis—and there are many points on which light has yet to be thrown—can only be made when observers combine the clinical and pathological sides, and every observer is his own clinician and own pathologist in his special line.

Chart I.—*Typical Case in the Primary Stage.*
Two chancres on penis, two on scrotum; no adenitis; date of infection not clear; spirochaetes found.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.
First injection	−	−	+	++
Second injection (8th day after first)	++	−	+	++
Third injection (8th day after second)	++	−	−	−
Fourth injection (8th day after third)	−	−	−	−

The reaction was tested on the 7th, 14th, 21st, and 28th days after the last injection, and was negative on each occasion.

Chart II.—*Typical Case in the Secondary Stage.*
A typical case of early generalized syphilis, rash, sore throat, etc.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.
First injection	+++	+++	+++	+++
Second injection (8th day after first)	+++	+++	+++	+++
Third injection (8th day after second)	++	+++	+++	+++
Fourth injection (8th day after third)	+++	+++	+++	+
Fifth injection (8th day after fourth)	−	+	++	−
Sixth injection (8th day after fifth)	−	−	−	−
Seventh injection (8th day after sixth)	−	−	−	−

The reaction was also found to be negative on the 10th, 14th, and 28th days after the last injection.

Chart III.—*A Responsive Case in the Tertiary Stage.*
The patient contracted syphilis twenty-five years ago, for which he took mercury off and on for four years. For the past five years he had been troubled with cutaneous gummata, which disappeared under mercury and iodides, to quickly reappear after treatment was discontinued. In 1911 the patient had three intramuscular injections of salvarsan, and he came to me for a Wassermann test just after Christmas. There were no symptoms at the time.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.
First injection	+++	+++	+++	+++
Second injection (8th day after first)	+++	+++	+++	+++
Third injection (8th day after second)	+++	++	+++	+++
Fourth injection (8th day after third)	++	+	+	+
Fifth injection (8th day after fourth)	−	−	−	−
Sixth injection (8th day after fifth)	−	−	−	−

Chart IV.—*A Typical Case in the Latent Stage.*
A man aged 29 contracted syphilis five years ago. The attack was very mild, but nevertheless the patient continued his mercury treatment (pills and injections) for four years. A recurrence never appeared. On three different occasions the blood had given a negative Wassermann reaction, but the patient, being anxious to marry, was desirous of an injection of "606" to make things sure.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.	Fourteenth Day.
First injection	−	+	+++	−	
Second injection (8th day after first)	−	+	+++	++	
Third injection (8th day after second)	−	+	+	++	
Fourth injection (8th day after third)	+	+	+	+	+
Fifth injection (21st day after fourth)	+	−	−	−	
Sixth injection (8th day after fifth)	+−	−	−	−	
Seventh injection (8th day after sixth)	−	−	−		

The reaction was also negative on the 7th, 14th, 21st, and 28th days after the last injection.

DISCUSSION.

Dr. A. RENSHAW (Manchester) said that a bactericidal substance in great dilution acted in a positive chemiotactic manner, and since salvarsan was bactericidal, recurrences could be due to the drug not gaining complete access to the tissues. Therefore, would a great dilution of salvarsan, given intravenously, withdraw the organisms towards the blood stream where a subsequent injection could act? It was further suggested that varying times should be allowed to elapse between weak and strong injections, so as to withdraw first the superficially situated organisms, then later longer intervals should be allowed for the greater distance to be traversed.

Dr. R. W. MACKENNA (Liverpool) said that in Liverpool they found three injections of salvarsan at the most sufficed, when combined with a vigorous mercurial treatment, to cure their cases; he feared that Mr. McDonagh had needlessly supplied the opponents of salvarsan with an argument against its use by abandoning his original position.

Mr. MCDONAGH, in his reply, thanked Dr. Renshaw for his suggestion, and said that he would put it into practice and report later on. Possibly the patients mentioned by Dr. MacKenna were not really cured, but had merely had their syphilis rendered latent. The opponents of salvarsan had for the most part never employed it, so little heed need be paid to their views.

THE VACUUM ELECTRODE IN NEURODERMITIS.

By J. GOODWIN TOMKINSON, M.D.,

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THE dermatologist's therapeutic resources are not infrequently put to a severe test in combating the intense pruritus which unfortunately accompanies many morbid cutaneous conditions. In recent years the curative and palliative value of *x* rays and of radium in certain itching affections has been recognized, but the application of these potent physical agents is not invariably successful. The value of high-frequency currents in pruritic conditions has not, in my opinion, received that general recognition which it deserves. My attention was directed some years ago to their use by Lacapère in the out-patient department of the Saint Louis Hospital, Paris.

The first case in which I employed the vacuum electrode for the relief of localized intense itching was one of pruritus ani. The patient was a man in the early prime of life. The condition had become chronic and was markedly rebellious to ordinary therapeutic measures. I think I am justified in regarding the condition as permanently cured, for after a slight relapse, nine months after the first course of treatment, I have not been again consulted by the patient.

Professor Gaucher, in volume xiv of the *Nouveau traité de médecine et de thérapeutique* (Brouardel et Thoinot), says that the application of high-frequency current is an excellent mode of treating lichen simplex chronicus, as well as all lichenoid thickenings of the skin.

In the affection variously described as lichen simplex chronicus, *névrodermite* (neurodermitis), etc., the most arresting clinical feature is that form of induration to which the names "lichenification" and "lichenization" have been given by the French school. The accompanying itching is of a severe type, often very intense, and doubtless is the most frequent cause of the patient seeking medical advice. The first case of this kind in which I employed the vacuum electrode was that of a young miner. The lesion was situated in the lumbo-sacral region. An ointment of salicylic acid and oil of cade was applied daily, and the vacuum electrode once weekly. The itching soon yielded to the treatment, and in several weeks the plaque disappeared. The patient has not again sought relief.

My second case was that of a merchant about 40 years of age, who had several plaques about the region of the neck and shoulders and a keratotic condition of both palms. I had previously treated his son, a boy aged about 5 years, for xerodermia. The patient was in a depressed condition, having recently lost his wife. During the local treatment he took from time to time such tonics as iron, arsenic, and strychnine. Various preparations of salicylic acid and oil of cade, etc., were employed locally, and eventually ointments of these drugs and accompanying treatment with the glass electrode of low vacuum. The condition was somewhat rebellious to treatment, but ultimately all the body lesions disappeared. The *x* rays, however, with boric acid wet dressings proved most effective in dealing with the palmar condition.

My last case was that of a French lady. Nearly the whole of the neck was encircled by the lesion which also extended on to the right mastoid area. Previous to consulting me she had had *x* rays and radium treatment, and judging from the telangiectases which had replaced portions of the lesion, the treatment had been somewhat heroic. The local treatment consisted of a salicylic acid and oil of cade ointment, the strength of which was progressively increased, and three vacuum electrode sittings weekly. At the commencement of treatment the itching was decidedly distressing, seriously disturbing the patient's rest. It was, however, rapidly alleviated after a few applications of the electrode, and somewhat later the induration began to disappear. The patient is now on a visit to the South of France, and at the time of leaving was almost well. Unfortunately the telangiectases persist. It might be suggested that the induration was part of the result of irradiation. It was, however, undoubtedly that clinical variety known as lichenification, and not the keratotic condition resulting from excessive irradiation. The general treatment consisted of careful regulation of the diet, the exhibition of alkalis, and the free drinking of Vichy water.

To sum up: Careful regulation of the diet, the adoption of that mode of medical treatment suggested by the general condition of the patient, together with the use of ointments of salicylic acid and oil of cade in progressively increasing strength, and the application—sufficient to produce a transitory erythema—of a low vacuum electrode twice or thrice weekly will, I believe, in most, if not all, instances clear up the condition.

PAPILLIFORM LESIONS (LYMPHANGIOMATA) OF THE SCROTUM,

ASSOCIATED WITH MULTIPLE PETECHIAL SPOTS ON THE TRUNK AND LIMBS.

By FRANK COLE MADDEN, M.D.Melb., F.R.C.S.Eng.,

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THE subject of this peculiar condition was a young Egyptian fellah, Mohamed Amin, aged 23 years, from Minet-el-Gamh, Lower Egypt. He presented an extraordinary appearance, quite new to my experience, which I will endeavour to describe.

Clinical Appearances.

The whole skin of the scrotum was thickly studded with small, succulent, pedunculated elevations, like thick-walled vesicles, purple or mulberry in colour, which were sprouting from the skin of the scrotum, the root of the penis, and the perineum as far back as the anterior margin of the anus. The elevations varied in size from a pin's head to a pea, and presented all shades of colour from that of a morella cherry to a black grape. None of the skin of the scrotum was visible, but it appeared to be normal around the bases of the elevations, on separating them from each other with the finger. The root of the penis was sown with similar excrescences and a few were present on the body of the organ, but not on the glans. The perineum was in a similar condition, but more sparsely covered (Fig. 1). On cutting into the vesicles, which were quite painless and insensitive, a dark haematin-stained fluid was discharged, but no fresh blood.

Both thighs as far as the knees were covered with tiny dark purple spots, like subcuticular petechiae, and here and there raised papules of the same colour as the vesicles on the scrotum, which only rarely formed pedunculated elevations. The skin of the back, especially in its lower part and over the gluteal region, was more densely covered with these pigmented points, and a similar condition existed on the abdomen, and extended up as far as the costal margins (Fig. 2). There was an especially dark massing of these spots at the umbilicus, and a few scattered points also occurred on the inner sides of the elbows. These manifestations were apparently simple petechiae in the skin and

under it, with dark haematin staining. The skin generally was dry and rough, and the glands in both axillae and groins were enlarged.

There was no fever at any time, no enlargement of the liver or spleen, and the heart and lungs were healthy; 1,800 c.cm. of

Fig. 1.—Photograph taken on admission to hospital. The characters of the papilliform elevations and their distribution are well seen, and also the outlying papules on the thighs and abdomen. Dark points of pigment are also to be seen on the thighs and abdomen.

urine were passed in twenty-four hours, with a specific gravity of 1018, an acid reaction, and 3.5 per 1,000 of albumen and 1.7 per cent. of urea; no casts or bilharzia ova were found. The albuminuria persisted throughout the treatment, but there was never any anaemia or other evidence of nephritis.

The boy was thin and anaemic, and his blood count, which was kindly done for me by Dr. Anis Onsy, Assistant Professor of Pathology, worked out as follows: White blood corpuscles, 10,250; red blood cells, 2,900,000 per cubic centimetre of blood. Differential count: Polymorphonuclears, 70 per cent.; large mononuclears, 8 per cent.; lymphocytes, 19 per cent.; eosinophiles, 2 per cent.; transitionals, 1 per cent. Two hundred leucocytes were counted. No filarial embryos could be discovered in the blood after repeated examinations.

History.

The patient stated that five years ago he began to notice scattered purplish points on the scrotum, which at first he took to be flea-bites. To his surprise, each began to project above the surface of the skin, and in a year's time the scrotum was covered with tiny pedunculated elevations, which gave rise to considerable itching when he became hot. The spots on the thighs and loins appeared three years ago, and spread on to the abdomen. He thought that wherever the fluid from one of the growths fell another developed, and if he cut one off another came in its place. The family history was good, and there was no personal or family history of syphilis.

The diagnosis presented considerable difficulty, as it resembled nothing that any of us had ever seen, and Sir William Osler, who was in Egypt at the time and was good enough to see the case with me, was equally puzzled to decide how to classify it. The peculiar subcuticular spots suggested a blood origin, but this view was not supported by the other symptoms or the examination of the blood; and we had, therefore, to depend upon the pathological examination of the growths themselves to establish a diagnosis.

Pathologist's Report.

Professor A. R. Ferguson, Professor of Pathology, first examined smears from the cut surfaces of the growths, and reported that no definitely specific parasite could be found. The contents comprised: (*a*) A large coccus in considerable numbers; (*b*) a yeast, also abundant and actively budding—a comparatively small yeast; and (*c*) a long slender bacillus rather like *B. lepra*, but not acid-fast. No protozoan parasites were to be made out. A strip of skin was next removed from the centre of the affected scrotum; and it was seen that the deep surface of the skin was quite smooth, but showing through it were many prominent sebaceous glands, forming minute elevations visible through the connective tissue. These elevations did not correspond with the vesicles, which were more superficial, and could not be seen from the under surface. The skin itself was not thickened, and the growths when cut into appeared as thin-walled cavities filled with a dark fluid.

Professor Ferguson made a further report on the microscopical examination of the removed strip as follows: "Herewith a note on the warty condition of the scrotum and a photomicrograph of one of the vesicles—lymphangiomata as I consider them. Numerous film preparations stained by Giemsa's method were examined. No protozoan parasites of any kind were met with. The cells of a small yeast were present on most of the occasions on which films were made. The bacteria present included large diplococci as well as short streptococci, but these all were of accidental and superficial character, and none were found deeply in the substance of the lesion.

"Examined in microscopical sections the lesion is found to consist of enormous numbers of small lymphangiomatous structures, the material in the dilated spaces of which they are composed being apparently coagulated lymph. These little lesions are quite superficial, the skin over them being considerably thinner than elsewhere. They are capped by a layer of keratinized epithelium of greater thickness than that found in parts of the scrotum in which the lymphangiomata are absent. (Fig. 3.)

"Most of the lymphangiomata are composed of about a dozen vascular spaces of irregular size. They are separated from one another by small trabeculae of recent connective tissue. The majority of the spaces contain a homogeneous finely granular material with very few cells, and these are mainly of the small mononuclear variety. Into some of the larger spaces of the lymphangiomata haemorrhage has occurred."

Treatment.

The line of treatment was not very clear, but on Sir William Osler's suggestion a prolonged course of *x* rays was carried out by Mr. W. M. Colles, Assistant Professor of Chemistry. A soft tube, at 15 cm. distance, was employed, starting with an exposure of five minutes and gradually working up to twelve minutes, without the slightest effect; and finally, at the earnest request of the patient, I excised the whole of the affected area and made

Fig. 2.—Posterior view of the patient, showing the scattered papules; but the main feature is the pigmented petechial spots, which are especially thickly sown over the lumbar and gluteal regions.

him a new scrotum from the surrounding skin of the thighs, perineum, and buttocks. He left hospital three weeks later, there being still a few growths on the

body of the penis. The pigmented spots had somewhat faded during his lengthy stay in hospital, but were otherwise unchanged.

Remarks.

The microscopical examination appears to limit the question of diagnosis to two pathological groups—angioma and lymphangioma, or to one or other of their many varieties. My opportunities of consulting recent modern literature on this and allied subjects is very limited, but in the last edition of Sir Malcolm Morris's *Diseases of the Skin*, pp. 665–670, the main characters of both these conditions are described, thus enabling me to make a comparison between them and the case under discussion.

The photomicrograph furnishes the most convincing diagnostic evidence, as it distinctly shows that the essential part of the lesion consists in epithelial covered vesicles in the superficial layers of the skin, and that these are really new formations of multiple minute lymphangiomata, filled with coagulated lymph and coloured by old haemorrhage that has occurred into some of these spaces.

Having thus stated our case, we may now compare our findings with the other diagnostic possibilities as presented

Fig. 3.—Photomicrograph showing the minute microscopical appearances of one of the vesicles. (See text.)

in the work before us. It is therein stated that "angio-keratoma is characterized by the development of capillary telangiectases with small, warty growths on the hands and feet, chiefly on the dorsal aspects. It has been known, however, to occur on the scrotum. The fully-developed lesions are rough on the surface, hard, and sometimes covered with thickened epidermis to resemble warts. Further, this condition is always associated with a marked tendency to chilblains," a condition which is non-existent in Egyptians. "The essential feature of angio-keratoma is telangiectases resulting from repeated temporary dilatations of the small blood vessels."

A reference to the description of our case will readily show wherein it differs from angio-keratoma, nor does it bear any resemblance to infective angioma or to angio-fibroma contagiosum tropicus (q.v.). There is, however, much more similarity to lymphangioma. "The ordinary form, lymphangioma circumscripta cutis, is characterized by an overgrowth and dilatation of lymph vessels and the formation of new ones in circumscribed areas of the skin. Patches of greater or lesser extent are found covered with clusters of small vesicles." "They are pale or straw-coloured, and contain clear alkaline fluid in which a few lymph corpuscles are found." "Bernard holds, as does Brocq, that the disease is primarily one of the lymphatics, and that the appearance of blood is due either to the rupture of capillaries into the lymphatic dilatations, in which case the fluid of the vesicle is pinkish." In our case, however, the pigmentation was a marked feature, even allowing for the darker Egyptian skin, and, moreover, the presence of pigmented points, apparently due to haemation, in so many other parts of the skin surface makes it probable that this same pigment was responsible for the pigmentation throughout. The presence of this pigment serves also to distinguish the case from lymph-angioma tuberosum multiplex.

It may be that the condition we have described is one of the varieties of haemato-lymphangioma, but we are still at a loss to explain the association, if any, between the pigmented papilliform elevations and the petechial spots so widely distributed elsewhere.

We therefore submit the case for diagnosis to this more experienced tribunal, and trust we have made our description sufficiently clear to enable more highly qualified judges than ourselves to catalogue the case under its proper heading.

My best thanks are due to my friend and colleague, Professor Ferguson, for his careful study of the pathological side of this question, and to Dr. Tewfik Omar, Resident Surgical Officer, and to Dr. Ismail Diaiy, my House-Surgeon, for the excellent notes with which they have provided me

CHRONIC AND RECURRENT MALADIES OF THE SKIN IN RELATION TO HEART DISEASE.

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(*Abstract.*)

DR. WALSH, speaking from notes only, detailed the results of investigation of a number of chronic and recurrent skin diseases, in relation to lesions of the heart. The term "chronic" was applied to any form of skin trouble which had lasted a few months or upwards. The term "recurrent" was applied to cutaneous maladies tending to recur, sometimes with seasonal regularity, sometimes after attacks of acute intercurrent illness, sometimes without obvious cause. A broad exception was made as regards both chronic and recurrent disease, namely, that large group due to obvious and, so to speak, enduring or persistent infection, such as that of scabies, ringworm, syphilis, and tuberculosis; but even in these the course might be much modified by the state of the central circulation. As regards the cardiac defect, the author had only included cases in which the valvular murmurs were, in his opinion, undoubtedly of organic origin, or in which myocardial weakness could be inferred from the physical signs and from a history of influenza or marked disturbance of the general health.

The conclusions drawn from this investigation were, first, that a large proportion of chronic and recurrent skin diseases were associated with grave cardiac trouble. The heart lesion was for the most part valvular, and it appeared to exercise little or no effect upon the skin so long as cardiac compensation was fully maintained.

Thus a cook suffering from long-standing valvular disease of the heart recovers rapidly and physiologically from the traumatism of the kitchen fire so long as the heart muscle is enabled to maintain a healthy balance of the surface circulation. But let the cardiac muscle be weakened by an attack of influenza, a disease specially prone to affect the myocardium, and the cook would promptly develop erythema of the face. The central cardiac defect had been called into play and had disturbed the balance of the cutaneous circulation, with the result that for the normal or physiological reaction of the skin to the heat of the kitchen fire was substituted an abnormal or pathological reaction. The erythema probably drifted into rosacea, which the author regarded as a chronic condition, in this case symptomatic of heart disease. This principle of pathological reaction to mild or moderate traumatism accounted more or less satisfactorily for the onset, the duration, and the recurrence of many skin affections.

Another example was the case of a college athlete, exposed to the traumatism of sun, wind, rain, snow, and other irritants, from which his skin recovered rapidly and completely. In later life a single exposure to the sun might bring on a severe attack of sun dermatitis. Several

instances were quoted in which the acquired pathological reaction to the sun's rays had been apparently due to some abnormality in the cardiac circulation. Cases of recurrent summer dermatitis the author had so far found invariably associated with valvular disease of the heart. The connexion of heart trouble with acute, chronic, and recurrent inflammatory disorders of the skin, if it be established, would be likely to lead to a considerable readjustment of existing views on the etiology, the diagnosis, the prognosis, and the treatment of many cutaneous maladies.

The irritant or exciting cause of the traumatism might be of various kinds. If soda or scouring soap were substituted for the sun's rays, a number of cases of dermatitis associated with central circulatory defect would be found. One woman had a punctate erythematous rash of five or six years' duration. She was the mother of a family the members of which habitually washed their skins with a well-known soap. She alone suffered from dermatitis. The peculiar determining condition in her case appeared to be valvular disease of the heart, presumably set up by an attack of scarlet fever, after a confinement eight years previously. According to the author's view the balance of the surface circulation had been disturbed by the central circulatory defect, and the power of physiological recovery from the traumatism of an irritant soap had been lost in her case, although retained by the rest of the family. The dermatitis in this case might be regarded as a delicate clinical sign of heart disease.

A similar central circulatory defect was present in a large proportion of chronic skin affections of a dry, thickened, or scaly type. The case that formed the starting-point of the present investigation was that of a lad of 17 years, whose legs showed numerous rounded, infiltrated, purplish, scaly patches of lichen planus type. Many of the patches had coalesced, leaving here and there islands of healthy skin. There were numerous small outlying scaly papules. The eruption started from a graze of the shins some eight or nine months previously. The lad's hands were dusky, and he was found to have mitral obstruction. In ordinary circumstances a graze of the kind would have healed up within a fortnight, with little or no treatment. The substitution of a chronic spreading dermatitis for the normal healing process the author regarded as due to the disturbed balance of surface circulation, leading to failure in nutrition and tissue activity, as well as of the phagocytic and other lines of circulatory defence against microbial invasion. In this instance, as in others observed by the author, the clinical evidence of the local pathological reaction to traumatism formed a more delicate test of the cardiac inadequacy than the ordinary signs and symptoms of heart disease, such as shortness of breath, palpitation, dyspepsia, swelling of feet, and the like. In the lad's case the duskiness of the hands which called attention to the circulation was probably independent of the mitral obstruction. In many cases, however, where chronic or recurrent skin diseases had been found associated with organic defects of the heart there had been nothing that in the course of an ordinary clinical investigation in any out-patient department would have suggested the need of an examination of the heart.

The aim of the paper was to substantiate, by means of illustrative cases, the main proposition that, excluding certain groups due to obvious resistant specific infections, a large proportion of chronic and recurrent skin diseases of manifold type, together with a few of sudden onset, are associated with central circulatory defects. To that broad general observation was added the further one that the skin phenomenon appeared to be due to the loss or diminution of the normal reaction against moderate traumatism possessed by the ordinary individual with a sound heart. No attempt had been made to investigate the qualitative changes in the blood as apart from the qualitative changes which might be reasonably assumed to take place in the capillary circulation as a result of defects in the central pumping mechanism. The precise way in which pathological changes in the skin were related to central circulatory disorder was not considered. Generally, it was clearly impossible for a blood stream deficient in amount properly to discharge its duties of nutrition, of phagocytosis, of opsonic attack, in short, its whole wide range of defensive and trophic function. The addition of the element of abnormal capillary circulation, whether in the direction of excess or deficiency, explained why a traumatic influence was suddenly rendered effectual upon an individual previously immune.

Should any general relation of pathological reaction of the skin to traumatism, external or internal, be established in patients suffering from heart disease it would probably afford a key to many obscure points, not only in dermatology, but also in general medical pathology and etiology.

It would, for example, modify our attitude with regard to psoriasis and allied affections. The cases cited seemed to prove a close connexion between chronic psoriasiform diseases and central cardiac defect. Most writers upon dermatology recognized the presence of some systemic defect in psoriasis. In the author's view the essential predisposing condition was in many cases of cardiac origin. The characteristic sites of psoriasis were in regions where the circulation was limited, and, therefore, specially liable to be affected by any weakening of the capillary circulation. Psoriasis was probably identical with seborrhoeic dermatitis, both being due to unidentified organisms which, in the case of psoriasis, were possibly distributed by the circulation, and, in the case of seborrhoeic dermatitis, arose from external infection. In both the circulatory defect seemed to be more or less concerned in the majority of instances. Although the author had found a large proportion of cases of chronic psoriasis connected with heart disease, this did not always occur. However, in psoriasis that was not thus associated, one usually found other evidence of circulatory deficiency, such as pallor, weak pulse, cold extremities, and nails that were dusky, brittle, and curved.

Disturbance of the balance of surface circulation probably explained the irregular action of drugs upon the skin. Nothing was more certain in dermatology than the uncertainty of many remedies which at times undoubtedly exerted a useful action upon cutaneous maladies. It was clear that if the blood were charged with a remedy—say, with a vaccine—it could not exercise its acquired therapeutic powers upon a pathological skin unless presented locally in adequate amount and with free access. Possibly it was to the state of the circulation that one might look for the explanation of the disappointing results that often attend Wright's vaccine treatment, especially when the muddy complexion and weak pulse commonly associated with acne vulgaris was considered. Then, again, Bier's hyperaemic methods depended for their success upon the local reinforcement of the capillary circulation. The cardiac factor also supplied a scientific explanation of the acknowledged value of rest in many skin affections. The value in skin diseases of certain spas and other water-drinking cures, of sea-water injections, and of prolonged baths, probably depend on restoration of the volume of surface circulation.

The practical outcome of the author's observation was manifold. Prognosis, both as to recovery and to recurrence, would largely depend upon the heart condition, and this applied even to such unexpected directions as operation upon lupus, which had recurred again and again in spite of thorough removal in a girl suffering from valvular heart disease.

As to treatment, the practical inference was that if it were wished to secure the full local effect of internal remedies upon the skin they must be combined with methods capable of flushing the skin with an adequate supply of blood. The author for some years past had been in the habit of treating certain skin diseases by attention to the circulation—first, by cardiac tonics, rest, diet, carefully regulated physical exercise, and, secondly, by hot baths, hot air baths, massage, electrical stimulation, and other measures aimed at restoring the balance of the cutaneous circulation.

There is little to be found in medical literature bearing on this subject. Dr. George Dock, in Nothnägel's *Encyclopaedia*,[1] pointed out that circulatory disturbances occurred in the skin even when there was no general venous congestion. The only other article found on the subject was one by Drs. Nevins Hyde and McEwen on the relation of certain dermatoses to each other and to changes in the vascular-equilibrium.[2] They referred to certain dermatoses affecting the hands and feet as usually due to vasomotor influences. The author's own observations went further and connected a wide range of cutaneous

maladies with a central circulatory defect. A table giving details of a number of cases was put forward. There would be little difficulty in enlarging the list to an almost indefinite extent. Some additional cases have been kindly contributed by Dr. Norman Meachen and Dr. Halls Dally. Any dermatologist wishing to test these observations has merely to examine the heart in all chronic cases in his hospital and private practice, excluding those due to acne, scabies, syphilis, tuberculosis, and to ringworm, and other coarse fungus. In each of these diseases, however, the severity appeared to be closely dependent on the condition of the heart. In syphilis it should be remembered that one was dosing one's patient with depressant remedies; cases of severe acne and of recurrent lupus after operation had been noted in connexion with valvular disease; in acne, moreover, a weak pulse was commonly present.

Some writers upon dermatology ascribe a large number of skin affections to nerve disorders, including sensory, motor, vasomotor, trophic, and glandular disturbances. The nervous system permeates the whole body, and must, therefore, be more or less intimately concerned in every serious pathological process. Was it not possible that the circulatory was more essential than the nervous element in many skin affections?

Drug eruptions might possibly be determined by circulatory conditions. Damage due to the local deposition of a drug like iodine would clearly be more liable to persist in the absence of a good surface circulation. Morrow had pointed out that many of the drugs that produced eruptions acted specifically upon the nervous system. It might be said with equal force that they depressed the heart and general circulation. The following list might be cited in support of that suggestion: Aconite, acetanilide, antimony, antipyrin, arnica, boric acid, ergot, phenacetin, iodine, bromine, sulphonal, various vaccines and antitoxins.

Finally, the author had noted chronic inflammatory conditions of deeper tissues in patients suffering from combined disease of skin and heart. It had seemed to him that the pathological reaction visible to the eye in the case of the skin might be duplicated in the deeper unseen tissues. In circulatory inadequacy, accordingly, one might possibly find a key to the onset and the duration of various organic troubles as the result of a process not differing essentially from that visible on the surface of the body. The internal organs must obviously be subjected incessantly to traumatism of various kinds, such as those due to diet, to disease products, to drugs, and to many other irritants. In the majority of instances recovery of internal organs took place just as in the skin. In other cases, however, the patient died or drifted into chronic organic disease. Might not this difference in result be dependent on the soundness or otherwise of the central circulatory organ? It was known that patients suffering from organic heart disease might recover rapidly from acute intercurrent maladies such as pneumonia, possibly or probably because they started with good compensation. At any rate, the outlook would be less favourable for a similar patient were the pneumonia associated with influenza or some other acute malady prone to weaken the myocardium.

The author's main conclusions were:

1. That a large number of chronic and recurrent skin eruptions were associated with disease of the heart.
2. That unsuspected organic heart trouble was comparatively common amongst patients attending a skin hospital.
3. That prognosis in skin diseases large depended on the state of the heart.
4. That attention to the circulation was imperatively demanded in a large number of skin affections.
5. That the success or failure of much of our skin therapeusis depended on the attention paid to the circulation.
6. That the circulatory inadequacy which determined the onset and duration of many chronic or recurrent skin eruptions might likewise affect internal organs.
7. That what was called "idiosyncrasy" might in many cases simply describe a pathological reaction, natural or acquired, to moderate traumatism. In this way the irregular incidence of trade and of drug eruptions might in many cases be explained—predisposition simply being another name for central cardiac inadequacy and disturbed balance of capillary circulation.
8. That in all cases of delayed healing or of chronic skin disease the state of the circulation should be carefully investigated.
9. That when it was proposed to administer any drug, such as mercury or arsenic, known to act as an organic irritant, the possession of a normal or a fully compensated central circulation should be regarded as a *sine quâ non*.
10. That the delayed healing of wounds and the persistence of inflammatory conditions, external or internal, often afforded a clinical test of cardiac inadequacy more delicate than the shortness of breath, palpitation, and other ordinary evidence described in the textbooks.
11. That the dermatologist who wished to do justice to himself and his patients would have to keep a constant eye upon the heart and its treatment in relation to diseases of the skin.

REFERENCES.
[1] Chapter on Diseases of Heart, p. 516. [2] *Transactions of the American Dermatological Association*, 1904, vol. xxviii, p. 64.

DISCUSSION.

Dr. NORMAN MEACHEN (London) thought dermatologists were apt to neglect routine examination of other systems of the body. Were these habitually examined many other abnormalities would probably be discovered; he had little doubt that Dr. Walsh's views were correct. He had himself not systematically examined the heart in his cases, partly from lack of time, but he intended to do so in future. He was specially interested in the observation that symptoms of heart disease might first be manifest in the skin, as, for instance, in shedding of the hair when no local cause for the defluvium could be discovered, or in failure of the heart to react normally to slight traumatism.

Dr. R. W. MACKENNA (Liverpool) said that during the past ten or fifteen years research in the domain of dermatology had taken a histological or bacteriological line, and the bacteriologist had not invariably led the dermatologist along the right path. It was interesting to be brought face to face with the possibility that perhaps central defects played a larger part in the etiology of chronic skin affections than had previously been suspected. Probably the dermatologist had used his stethoscope too little. In future he intended to examine the heart in all chronic and recurring affections of the skin.

Dr. HALLS DALLY (London), speaking as a physician specially interested in disturbances of the heart and circulation, found Dr. Walsh's ideas stimulating, since previously the work of the cardiologist and dermatologist had not been regarded as connected. Among the patients who presented themselves at his clinic at the National Hospital for Diseases of the Heart those who were the subject of skin disease did not seem to bulk largely, but probably more would be discovered or a history of a chronic or recurring affection be elicited if careful search were made. Certainly a more extended use of the stethoscope by the dermatologist might, as Dr. Walsh had adumbrated, yield a crop of circulatory disorders. It would then remain to work out the exact connexion between the two groups. The speaker then showed the cardiograms of certain cases in his practice which had exhibited cutaneous disorders, probably of circulatory origin.

SYSTEMATIC STUDY OF MORBID CONDITIONS OF THE NAILS.

By G. NORMAN MEACHEN, M.D., B.S.Lond., M.R.C.P.Lond. and Edin., M.R.C.S.Eng.,
Physician to the Blackfriars Skin Hospital; Lecturer in Dermatology, North East London Post Graduate College.

IT is not my purpose, nor is it within the scope of this paper, to deal exhaustively with all the different pathological conditions of the nails, but rather to present a ect observations, mainly from the clinical standpoint, resp ing onychology as a branch of dermatological science.

In the first place, it must be admitted that tions are not common. It is quite possible, for instance, to pass several weeks in a large skin clinic without seeing a single case of obvious nail disease. Heller, the greatest living European onychologist, found 48 cases of nail disease in a series of 35,853 patients attending the University Clinic for Skin Diseases at Charlottenburg—that is,

a proportion of 0.13 per cent. My own figures approach these very closely, for out of 12,293 cases seen at the Prince of Wales's Hospital and the Blackfriars Skin Hospital since 1906, 22 cases of nail disease were observed—a proportion of 0.17 per cent. It should be understood that these cases were instances in which the nails were strikingly affected, or in which the patients sought advice solely or chiefly on account of the nails. It is always easy to overlook the small beginnings of disease in any part of the body, and it is easier still to omit the examination of such comparatively unimportant members as the nails.

It may be urged that affections of the nails, unless painful or grossly disfiguring, are not sufficiently common or important to occupy much attention, but in the interest of our patients I think we, as dermatologists, cannot afford to overlook the minutest detail respecting the skin and its appendages. I confess that I did not myself examine the nails of all my patients systematically until some five years ago, since when I have endeavoured to do so, and this determination has been rewarded by the discovery of many interesting conditions that would have otherwise escaped detection.

The great similarity between many of the different affections of the nails has given rise to some confusion as regards their nomenclature, while it has not added to the popularity of the study of nail disease as a whole. Thus, it has been openly stated by the highest authorities that it is impossible to distinguish some forms of such varied diseases as syphilis, psoriasis, eczema, and ringworm as they are prone to affect the nails. In a few cases the difficulty is, no doubt, very great, particularly if it should happen that no other lesions are present upon the skin as a guide or as confirmatory evidence. The late Dr. Radcliffe Crocker used to say that the "same appearances are constantly seen in nails produced by different causes." Is this invariably the case? Can we diagnose the disease from the clinical aspect alone, apart from collateral evidence afforded by an examination of the rest of the cutaneous system, by microscopic and other tests, and by taking into account the personal and family history of the patient? Not always, I think, but in the great majority of cases it will become increasingly possible to do so as the result of prolonged examination and comparison of individual cases.

The commonest actual disease of the nails is undoubtedly eczema, forming about 20 per cent. of the total number. The commonest minor abnormality is longitudinal striation, 95 cases of which I have observed. A certain faint degree of this striation or fluting is physiological, owing to the disposition of the papillae in the nail matrix, a fact first described by Sir Jonathan Hutchinson. This symptom may be much exaggerated, when the condition is known as onychorrhexis. It seems generally to increase with advancing years, and it may be associated with gouty symptoms, as has been pointed out by Sir Dyce Duckworth.

The health of the nails, like that of the rest of the body, depends a good deal upon the care which is bestowed upon them. Rough treatment with knives, scissors, or other instruments, bungling attempts at so-called "manicuring," and the more or less prolonged contact with various irritating substances that give rise to recognized forms of occupation or professional dermatitis, are responsible for a large amount of nail disease, much of which is, therefore, preventable.

The appearance of irregular white spots, popularly known as "gifts," upon the nail-plate is nearly always entirely due to the habit of forcing back the delicate layer of cuticle, which has received the name of eponychium, that projects slightly beyond the posterior nail-fold, and tends to advance over the lunula. This fold of tissue occasionally becomes unsightly, leading to its being pushed back, either slightly under or, more generally, up to and parallel with the edge of the posterior nail-fold. The slight force necessary for this procedure is quite sufficient to interfere with the normal process of cornification in the nail-root, resulting in the formation of the white spots. This explanation of the presence of "leuconychia guttata" is advanced by Heidingsfeld, who believes that there is no evidence that the white areas are due to an infiltration of the interstices between the cells with air, the explanation formerly in vogue. The habit of nail-biting, or onychophagia, is responsible for the conditions that you will see upon the screen.

Trauma.

The effects of trauma in the ordinary sense are well seen in the nails. Seeing that the nail is essentially a protective organ, it endeavours to accommodate itself as best it can to loss of substance of the sensitive finger-tip, sometimes curving over the injured phalanx like a bird's claw. The nails may become curved like a parrot's beak as a result of neglect in trimming them, combined with hard manual labour. Severe crushing and bruising of the distal phalanx may determine the presence of a permanent deformity of the nail, especially a dwarfing of the nail-plate from side to side, a partial or complete disappearance of the nail-plate in accordance with the degree of destruction of the nail-matrix, or the appearance of a bifid or a "gabled" nail, which may be adherent at the sides to the lateral nail-folds. I have seen a series of parallel, transverse markings upon the nail result from the habitual pressure of a knife-blade used for the purpose of pushing back the nail-fold as mentioned above.

Eczema and Psoriasis.

One of the earliest signs of eczema of the nails is the appearance of a number of fine depressions like pin-pricks upon the proximal portion of the lunula, whereas, in the case of psoriasis, a group of minute hyperaemic spots in the same situation may be the first manifestation of the disease. Psoriasis of the nails begins quite as often as a tiny erosion of the nail-plate, either at the side, distal end, or just at the root. Discoloration follows more rapidly in the case of psoriasis than in eczema, while in the latter a roughness and striation, together with irregular thickening, are, perhaps, more commonly seen. Heaping up and separation of the free edge of the nail is another characteristic feature of psoriasis. Heller estimates that about 9 per cent. of psoriatics have their nails affected. It is sometimes very difficult to diagnose the disease when it is localized strictly to the nails, nevertheless the diagnosis can pretty safely be made in the absence of fungus or of evidences of eczema in the immediate vicinity.

Parasitic Affections.

In ringworm of the nails, which is generally supposed to be very rare, but which is probably commoner than usually suspected, the whole of the nail is not often affected, and it is the rule to have only a few or even one of the nails attacked. In a series of cases recently described by Dr. Cranston Low, of Edinburgh, the number of nails affected varied from one to seven. It is a remarkable fact that tinea unguium is always due to the trichophyton and never to the microsporon fungus. Why it is hardly ever seen in children suffering from ringworm of the scalp may be due to the comparative rarity of the large spored fungus in certain localities. The diagnosis, I think, may often be made, or at any rate shrewdly suspected, apart from microscopic examination of portions of nail substance, by (1) the fact that several of the nails may be quite unaffected; (2) discoloration is a marked feature, especially the presence of the three-colour zone, as Dr. Low has pointed out. Thus, at the free margin of the nail it is dark and friable; a little higher up the colour is yellowish and longitudinally striped, while higher up still is a yellowish-red zone, smoother on the surface, representing the spreading edge. Failure to find the fungus upon a first scraping does not necessarily negative the diagnosis if these clinical characteristics be present. Violet and crateriform cultures are the rule. Favus of the nails is still rarer, and this disease generally involves the whole nail-plate. The length of time that some of these cases of onychomycosis last is noteworthy, a duration of forty years and upwards having been recorded.

Syphilis of the Nails.

The nails are affected in several ways in syphilis. The commonest, according to Heller, is the isolated papule of the nail-bed, which is a secondary manifestation, appearing first as a deep red spot in the nail-plate, which soon becomes eroded in a circumscribed fashion in a most characteristic manner. The dry form of onychia, O. sicca syphilitica, consists of a chronic roughening and discoloration, of an inflammatory type, which may make its appearance as late as four or five years after infection.

These kinds of nails cut like dry canes or reeds, as described by E. Kohn. A more deforming infection is the suppurative form of perionychia, which generally begins as a swelling and redness of the whole ungual phalanx, very like a septic paronychia. Ulcerative changes then appear in the nail-plate, as in a case recently described by Mr. McDonagh. Hereditary syphilis also shows itself in the nails, usually by a paronychia or a chronic onychitis.

Trophic and other Affections.

As Parisot has said, "The nails and the epidermis are the mirror which truly reflects the disturbances of nutrition from fevers and constitutional disease." I need only mention here the significance of the transverse marks, ridges, and grooves, described by Beau and Sir Samuel Wilks, indicating that the patient has passed through some severe illness. Such disturbances of the health as a confinement, or an attack of sea sickness, or even the existence of a patch of alopecia areata (Bulkley) may leave their indelible record upon the nail. It was Sir Jonathan Hutchinson who first pointed out that these furrows are always best marked upon the thumb nails, shading off as one passes towards the little finger. I would go further and say that in the majority of cases of nail disease, except the parasitic and traumatic, this tendency will be found, and I have ventured to call it the "law of diminishing intensity." According to this principle, all affections of the nails diminish in severity from without inwards—that is, from the thumb towards the little finger.

Another general rule I have ventured to formulate is the "law of symmetry," according to which it will be found that where a given nail is affected (except parasitically) the corresponding nail on the opposite side will show a similar condition. I have not seen this observation in any textbook or paper upon the subject.

The nails have often suffered severely after injury to certain nerves, such as the median in the forearm (Bowlby) and the superficial peroneal (Hirschberg), atrophy of the nail-plate resulting from the peripheral neuritis induced by the injury. The influence of the nervous and vasomotor systems in affecting the growth and development of the nail is seen in such affections as myelitis, tabes, syringomyelia, cerebral paralysis, etc., as well as in Raynaud's disease and erythromelalgia. In fact we may say that, apart from mycotic and inflammatory diseases, the greater number of cases of nail disease is found associated with those skin affections in which, as far as our present knowledge goes, neurotrophic or nervous influences are at work.

Mention must be made here of a peculiar form of longitudinal striation and discoloration affecting the whole of the nails, of a very chronic character, where no other part of the skin is affected, and which is often seen in weakly and debilitated subjects. This is a dystrophy which is amenable to the internal administration of arsenic and other tonics. Insomuch as the nails are a part of the general cutaneous system, there is hardly a single skin disease in which the nails may not be affected. One of the worst dystrophies I have ever seen was in a case of epidermolysis bullosa under my care, a photograph of which is to be found in the admirable article on diseases of the nails contributed by Dr. H. G. Adamson to Allbutt and Rolleston's *System of Medicine*, vol. ix.

Regarded from the developmental aspect, it is only natural that the nails and the hair should be affected together. Accordingly, we find that the ungual appendages are affected in about one half of the more serious cases of alopecia areata, and in nearly all the cases of alopecia totalis, whether syphilitic or not.

The Nails in General Diseases.

The union of dermatology with general medicine is well illustrated in the relationship of onychology to many general diseases. We are all familiar with the curved nails of the chronic phthisical patient and the hippocratic finger-tips of the subject with long-standing heart disease. In chronic tuberculosis, as Sir Dyce Duckworth has pointed out, the condition of the nails is one of correlative overgrowth, the nail being thinner and more polished. In acromegaly the nails are not enlarged, but they are hypertrophied in chronic pulmonary osteo-arthropathy (Marie's disease). Onychogryphosis has been known to reach a great extent owing to a blockage of the artery supplying the part. In diabetic gangrene the nails may become severely affected, but this is probably a result of the accompanying peripheral neuritis. I have already mentioned some of the systemic nervous diseases in which nail changes are found.

Atrophy of the nail or spooning of the nail-plate (koilonychia) is sometimes seen to follow some severe constitutional disease, especially typhoid fever, measles, influenza, or pneumonia, quite apart from the transverse markings left by these affections.

A marked pallor of the nails may be seen in anaemic conditions, and a remarkable tint of the nails resembling the purplish-white hue visible on the interior of the shell of the hen's egg was described in 1905 by Dr. J. Nevins Hyde, who called the condition the "eggshell nail."

Classification of Nail Diseases.

The following working classification of diseases of the nails, simplified from Heller, I have adopted as being the most practical:

A. CONGENITAL.
B. ACQUIRED.
  I. *Primary.*
    1. Hypertrophy.
    2. Atrophy.
    3. Inflammations.
    4. Parasitic.
    5. Syphilitic.
    6. Traumatic.
    7. Nutritional.
  II. *Secondary to Other Diseases.*
    1. Of the skin: syphilis, eczema, psoriasis, etc.
    2. General diseases.
      (*a*) Nervous, neuro-trophic and vasomotor.
      (*b*) Circulatory.
      (*c*) Diathetic, gout, diabetes, acromegaly, etc.
      (*d*) Blood.
      (*e*) Acute infections.
      (*f*) Senile.

CONCLUSIONS.

Finally, I would submit the following conclusions with regard to nail diseases:

1. That it is difficult to work up an enthusiasm for a comparatively unimportant section of a special branch of medicine; but, nevertheless, onychology as a sub-branch of dermatology is worthy of the serious and earnest attention of those interested in the latter subject.

2. That in every case of skin disease presenting itself for treatment, either at hospital or in private practice, the condition of the nails should be briefly noted at the time of the examination.

3. Were this carried out systematically in every instance, I venture to assert that not only will abnormalities of a most interesting description be frequently found, but also many signs of cutaneous and systemic disease may be hereby discovered.

4. In the great majority of cases of nail disease it is possible to diagnose the morbid condition from careful inspection alone.

5. The two general principles enunciated above—the "law of symmetry" and the "law of diminishing intensity"—are applicable in all cases of nail disease except those due to injury or parasitic causes.

[This paper was illustrated by numerous lantern slides.]

SEBACEOUS CARCINOMA AND ITS RELATION TO RODENT ULCER.

By LOUIS SAVATARD, L.S.A.,
Honorary Assistant Physician, Manchester and Salford Skin Hospital.

IN reporting the two following cases, the point on which I wish to insist is that just as the basal cell carcinoma (rodent ulcer) differs from the prickle cell carcinoma (epithelioma), so the sebaceous carcinoma is distinct from the basal cell carcinoma, clinically and histologically, and that from the cells of the sebaceous glands a rodent ulcer does not and cannot originate. The acinous formation of the cells in rodent ulcer has suggested to some its origin from the sebaceous glands, and such we find indicated in some modern atlases and textbooks of dermatology; but I would submit that this arrangement is determined by the connective tissue amidst which the

growth extends. Though I have seen and treated some 500 cases of cutaneous carcinomata, and have carefully examined many of them, these two following cases alone could be classed as true carcinomata of the sebaceous glands.

Case I.

A married woman, aged 41, was seen at the Cancer Hospital, Manchester, in June, 1900. About four years previously the patient received a blow on the right cheek. Soon after she noticed a small lump forming in that situation. This gradually increased in size. In May, 1900, the patient saw Mr. Walter Whitehead at the Royal Infirmary, Manchester. Mr. Whitehead considered the case to be one of sarcoma of the jaw, and declined to operate, advising her admission to the Cancer Hospital. Latterly the patient had suffered considerable pain, and lost much weight. She was greatly emaciated, and looked considerably older than her years.

There was situated over the right ascending ramus of the jaw a tumour about the size of a hen's egg, very hard, and fixed to the underlying structures, preventing free movement of the jaws. The tumour had broken down in the centre, and from it was discharging a thin, watery exudation. There was paralysis of the right facial nerve.

At the necropsy, some months later, it was found that death was due to tuberculosis, and histological examination of the tumour showed that it was a carcinoma originating in the sebaceous glands—analogous to rodent ulcer. The large sebaceous cells composing the new growth were arranged in alveoli, with fairly dense fibrous tissue between the alveoli and around the growth. Examination under a high power showed these large polyhedral cells, with well-marked nuclei and nucleoli, quite distinct from the columnar basal cells of true rodent ulcer. There was no proliferation of the epidermis, and the upper portion of the corium was not invaded by the new growth.

The clinical appearance also was quite distinct from rodent ulcer, and was so characteristic that I was enabled to recognize clinically, some years later, the same condition in the following case:

Case II.

A man, aged 80, consulted me in July, 1911. He had numerous carcinomata on the face—some eight in number. Over the left ascending ramus of the jaw and extending below and behind the lobe of the left ear was a hard lobulated mass, firmly fixed to the deeper structures (simulating, somewhat, secondary carcinomatous invasion of the cervical glands). The tumour was not ulcerated at the time, though apparently there had been some little discharge previously.

This growth was of five years' duration. There was no pain and no paralysis, though the movement of the jaw was slightly impeded, and the jaw was now becoming more fixed. Histological examination confirmed my diagnosis. The slides showed the characteristic arrangement of the sebaceous cells and surrounding tissue. There was no down-growth from the superficial epithelium and the upper part of the corium was free from new growth.

Here again the clinical appearance was quite distinct from a basal cell carcinoma, though the patient presented true rodent ulcers and a crateriform ulcer (prickle cell carcinoma) on other parts of his face. There was also situated on the left side of the nose a small, raised, yellowish-brown nodule, with a central sebaceous plug, which, according to the patient, resembled the "pimple" from which the sebaceous carcinoma developed. On examination this proved to be a sebaceous adenoma, and I am inclined to believe that the carcinoma might have originated as an adenoma.

As the sebaceous glands are developed from the cells of the outer root sheath (which are themselves basal cells of the surface epithelium, and from which, undoubtedly, the true rodent new growth arises), it is only natural that we should expect to find that a carcinoma developing in these sebaceous cells would be analogous, in mode and rate of growth, to the basal cell carcinoma.

FIBRO-SARCOMA ON LUPUS SCAR TISSUE.

By Louis Savatard, L.S.A.,
Honorary Assistant Physician, Manchester and Salford Skin Hospital.

Though epitheliomata arising on lupus scar tissue are comparatively common, I have not found a recorded case of sarcoma on lupus scars, and think that perhaps a short account of the following case may be of interest:

A man, aged 49, attended the Manchester and Salford Hospital for Diseases of the Skin, under Dr. Brooke, nine years ago, for lupus vulgaris on both sides of the face. There was noted at the time on the right cheek a small epithelioma; the latter apparently disappeared under *x*-ray treatment, and the lupus was so much improved that the patient stopped attending. There had not been produced any apparent dermatitis during the administration of the *x* rays.

Nine years later he again appeared, with traces of lupus on both sides of the face, and a certain amount of sound scar tissue. There was in the left submaxillary region a rapidly growing fungating tumour, arising from dense scar tissue, very hard, and somewhat pedunculated.

I considered the case to be one of epithelioma, and after excision gave the specimen to Dr. Powell White, who I thought might be interested in it. Dr. White reported that the tumour was a fibro-sarcoma, and I am greatly indebted to him for the following histological report:

Report by Charles Powell White, M.D.

The tumour is pedunculated in shape, overhanging the adjacent epidermis. At the margin of the pedicle the epidermis comes to an end, and is not continued over the surface of the tumour. The tumour cells are mostly spindle-shaped, and are of varying sizes. There are several large multinucleated giant cells. Mitotic figures are very numerous. Between the cells is a varying amount of fibrillated intercellular substance. In some parts the amount is so small as to be scarcely visible, while in others it consists of well-formed fibres. Blood vessels are numerous and conspicuous. The tumour is a spindle-celled sarcoma, which has originated apparently in the cutis.

XANTHOMA MULTIPLEX.

By W. C. Oram, M.D.Dub.,
Stewart Medical Scholar, Trinity College, Dublin.

This disease, being somewhat uncommon, a note on an early case, although it presents no unusual points, may prove of some interest.

The patient, a young lady aged about 20, came under my notice a month ago, and has had symptoms of the disease for the past two years.

The lesions are distributed as follows: The palms of the hands and the flexures of the fingers are the most deeply involved, all the more important lines of the skin in these regions being picked out with the characteristic canary-coloured striae. The elbows over the end of each olecranon process show six or seven small yellow tumours about the size of half a pea. Smaller tumours are to be found scattered over the buttocks, and a very minute one upon the front of the right knee. The face and the rest of the body are unaffected, and the colour of the general skin is normal. There are no symptoms of jaundice or diabetes.

The disease causes no inconvenience, except that the lesions in the flexures of the fingers renders them somewhat stiff. Nothing in the family history calls for comment.

Histologically the tumours are composed of accumulations of globules of a fatty nature, the exact composition of which is the subject of some discussion.

The prognosis is not hopeful, most cases tending towards progression. As regards treatment, I have found in this case that a paint, consisting of acid. salicylic. ʒj, chrysarobin ʒss, ol. ricini ʒss, collodium flex. ad ℥j, suggested by Dr. Leslie Roberts, of Liverpool, when applied to the flexures of the fingers, made them much more supple; it also seems to have made the colour of the striae on the fingers much less intense during the short time that it has been used.

Dr. Wilmot Evans has recorded good results in the treatment of the disease by the *x* rays, and I have applied small, frequently repeated doses to the hands of this patient during the past month, but it is as yet too early to draw any conclusions. On the right elbow, however, I administered a full pastille dose of the rays three weeks ago, after having taken a wax cast of the condition as it existed at the time, and by comparing the cast with the patient's elbow to-day it is evident that a very considerable improvement has resulted, the tumours being less vivid in colour, and presenting a generally withered and atrophied aspect.

Note.—The case above described was one of those demonstrated before the members of the Section during the course of the week. On each of the three days that Section work was in progress the Section of Dermatology held informal meetings for the demonstration of cases half an hour before the reading of papers was timed to commence.

The Children's Country Holiday Fund (treasurer, the Earl of Arran, 18, Buckingham Street, Strand), to whose annual report we recently drew attention, is asking for subscriptions for the current year. A sum of 10s. covers all the expenses of a child during a fortnight, and though the fund is under the auspices of the Bishop of London, questions of creed do not come into consideration when selecting those to be sent away.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TREATMENT OF SYPHILIS.

MR. D'ARCY POWER, in his article on the treatment of syphilis, recommends the administration of mercury perchloride, and gives two prescriptions for this preparation.

Some years ago I pointed out, and, I believe, proved, that mercury perchloride was one of the least efficient, and indeed, when given in hard water like the London water, often a useless preparation for internal administration. In answer to the question, "What is the best preparation of mercury to be given in syphilis?" I wrote:

> Since each of the numerous preparations of mercury is believed to be of benefit in syphilis, and since the only constant factor in these various preparations is the metal itself, we must suppose that it is the metal itself which is the curative agent, and not any of the substances with which it is combined. This fact suggests the answer that the best preparation of mercury is that which, in safe, unirritating doses, contains the largest quantity of the metal; for if mercury be the enemy of the syphilitic virus it is inconceivable that the very small quantity of the metal contained in the one-sixteenth of a grain of the perchloride can be as useful as the comparatively large quantity contained in a grain of mercury with chalk. This theoretic advantage of preparations containing a large quantity of the metal is also confirmed by experience; for one of the most convincing proofs of the value of mercury in syphilis is its rapid and striking influence over infantile syphilis.

Now in this form of syphilis the hydrarg. cum cretâ is the preparation generally given, and its rapid effect is, I contend, due to the large quantity of the metal circulating in the small body of the infant. Moreover, I have seen patients progress but slowly or not at all while taking corrosive sublimate and who improved rapidly when put on a course of mercury with chalk, or subjected to a course of inunction.

Again, I have seen several cases of severe syphilitic iritis develop while patients were taking corrosive sublimate, and I have seen again and again grave tertiary lesions follow even a prolonged course of preparations containing a small quantity of the metal. But I have never seen such after a prolonged *uninterrupted* course of inunction, or of preparations like mercury with chalk and blue pill. Corrosive sublimate, which is so frequently given in syphilis, is the least efficient form in which to administer mercury internally, for not only does it contain in a safe dose an exceedingly small quantity of the metal, but even this small quantity frequently fails to reach the patient, for when given (as it frequently is) in solution in ordinary water containing lime salts, it is liable to decompose, the mercury becoming precipitated at the sides or on the bottom of the containing vessel. Theoretical considerations, then, as well as practical experience, point to preparations containing a large quantity of the metal as the best for administration in syphilis. But while it is of advantage to have a large quantity of mercury circulating through the tissues of the patient, the quantity must not be so large as to produce salivation, purgation, or any other injurious effects; for when the struggling tissues are injured by mercury or by any other cause, then the enemy triumphs, and the worst forms of syphilis may ensue. It will be seen that the view which I am advocating as the best method of treating syphilis—namely, maximal doses, short of mercurialism, of preparations of mercury containing large quantities of the metal—is a compromise between the old school, which did harm with excessive doses, and a modern school, which believes in minimal doses.

London, W. J. MCNAMARA, M.D.

THE twenty-third Universal Cookery and Food Exhibition will be held in the Royal Horticultural Hall, Westminster, from October 29th to November 2nd. The exhibition is devoted solely to exhibits connected with food, cookery, confectionery, and bakery, including new inventions and ideas in cooking, and an international display of trade novelties of a useful and educational character. In the list of patrons we note the names of Sir James Crichton-Browne, Sir Anderson Critchett, and Sir Arthur Downes.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LEEDS GENERAL INFIRMARY.

A CASE OF ACUTE PUERPERAL INVERSION OF THE UTERUS.

(Recorded by J. B. HELLIER, M.D.Lond., Honorary Obstetric Physician.)

THE patient in the following case, a woman aged 18, was admitted under my care on the evening of March 28th, 1912, having been sent in from a distance of 36 miles, She was a primipara who had been delivered on March 24th, and was suffering from puerperal inversion of the uterus.

There seems to have been some difficulty with the placenta, which was said to have come away in two pieces. There was much *post-partum* haemorrhage, and she had continued to lose more than the normal amount of lochia cruenta.

State on Admission.—She was blanched, with rapid pulse (128 to 140) and a temperature of 102.5°. The vagina was occupied by the fully inverted uterus, which felt like a large polypus with a pedicle two inches thick. It had a grey, sloughy appearance, and a small fragment of placenta was still adherent. The vagina was full of dirty offensive discharge. The cervix was fully dilated, and the division between vagina and cervix obliterated.

Treatment.—The patient was anaesthetized by intravenous injection of hedonal, about 820 c.cm. of a 75 per cent. solution being allowed to run into the vein at the elbow. After the parts had been disinfected as well as possible with lysol, I reduced the inversion by about 15 minutes' steady manual taxis. At first the uterus felt so large in proportion to the small "pedicle" that success seemed unlikely, but at the end of this time it went back somewhat suddenly. A large Hegar's dilator was introduced to make sure that reduction was complete, and the cavity was packed with iodoform gauze. No special signs of shock followed the reduction.

Result.—As the uterus was already in a condition of septic endometritis, daily irrigation was ordered, and the offensive discharge gradually ceased, but convalescence was complicated by a slight degree of phlebitis with swelling of the left leg. This, however, soon subsided, and she went to the convalescent home, and was thence discharged cured on May 22nd.

COMMENT.

The new anaesthetic, hedonal, answered very well here, and combined anaesthesia with the benefit of saline infusion. There was no difficulty as to the diagnosis, but one must remember how large the puerperal uterus is at this stage, and how lax the vagina. Thus, though the inversion was total, the hand could be passed nine inches into the vagina before the fingers were arrested by the inverted wall of the genital canal. After reduction the fundus reached the navel. I saw a somewhat similar case in November, 1909, in a patient who had been delivered by a midwife five days before; but here three minutes sufficed for the reduction.

I record the case because of the extreme rarity of the condition. Many a man practises for a lifetime without seeing a case, and a distinguished obstetrician of exceptional experience told me recently that he had never seen a case. Kuestner says that in the clinic of Braun and Spaeth in Vienna no case occurred in 250,000 deliveries, and Ahfeld saw but one in more than 100,000 labours.[1] This is true of well-ordered lying-in clinics, but a large proportion of the cases have occurred in the practice of midwives. Still, we must be fair to the midwives. If they attend half the cases in a district they are not necessarily to be blamed if they see at least half the inversions. The spontaneous occurrence of inversion is established beyond question. Probably it is often produced by undue traction on the cord for which the accoucheur is not responsible, as in cases where the cord is wound around the neck or entangled in the limbs, or is of abnormal shortness. Dyhrenfurth recorded a case of inversion where the cord measured only 1.4 inches.

It is a curious fact that in 64 cases of *post-mortem* delivery, collected by Reiman, inversion was found in 7. Inversion is now known to be commonest in young primiparae, but I think the case here recorded of inversion at the age of 18 must be amongst the youngest on record.

[1] Veit's *Handbuch d. Gynaecol.*, Band I, S. 383 et seq.

Reviews.

SOCIAL PATHOLOGY.

UNDER the title *Soziale Pathologie*,[1] Dr. GROTJAHN has published a work of which the value and interest will reward the great labour it has involved. In it he has collected the available material to illustrate the double way in which social factors act in the development of disease, and the disease reacts on social and racial problems. The field is enormously wide, yet it is here passed under systematic review with a fullness that has included practically every aspect to which attention has at any time been directed, and the perspective is on the whole so good that the distortions due to the author's national experience are easily noticed and allowed for. The great volume of information gathered under the German system of insurance has naturally contributed much of the material, but the resources of other nations have also been freely drawn upon, and as there is an ample bibliography the book is a store for those wishing to study any particular problem, as well as a chart for those who wish to survey the whole field.

With regard to the system of insurance itself, Dr. Grotjahn seems to have no hesitation, and so far as the book in its socially constructive aspects can be summarized, it may be said that he looks to development of the insurance organization as the road to improvements by which the deleterious action of disease on the validity and heredity of the race may be lessened. Incidentally he points out that the economic change in the position of the doctor is leading to a reduction of that charitable service which the old physicians looked upon as a duty of their office, and which "under a patriarchal system they were in a position to render," but that the profession is beginning to recognize that its members must now give an equivalent for this charitable work in the form of conscious social activity.

The study of each disease is systematized under six points: 1. Frequency, which measures the importance to society as the danger of the condition does that to the individual. 2. Form, the clinical type being the average of the more severe cases only, and socially less important than the abortive cases; with this fact the "carrier" problems have made us familiar. 3. The influence of social factors in production of the disease through such mediums as housing, sanitation, social habit. 4. The reaction of disease on social problems, such as those of population, defence, industry, and degeneration. 5. The influence of medical activities in the prevention of disease and in its remedy. 6. The influence of social measures in preventing and alleviating disease and its consequences. From these points of view each disease has its own characters, but presents also some features common to others of its class, and Dr. Grotjahn has at the end of each section attempted to bring together these general aspects. Under this method the studies of individual conditions all present points of interest, but vary in the amount of the available material and in their sociological importance in a way that indicated so far the selection to be made in a general review.

Tuberculosis is very fully discussed. International statistics are given to illustrate its relations to occupation, housing, and income; for Germany the annual cost, including that of inability to work, is reckoned as equivalent to a tax of not less than 15 marks per family. The fact noted that the absence of provision for dependents, when an insured person is an inmate of a sanatorium, has a serious deterrent effect on early cases, emphasizes the wisdom of the provisions of the British Insurance Act in this respect. The results of the study otherwise are in general conformity with opinion in this country on this subject.

With regard to venereal diseases, the German insurance system, by registering the number of days of total inability to work, affords an index, though certainly not an adequate measure of their frequency. In Leipzig the annual rates per 100,000 for syphilis, gonorrhœa, and soft sore respectively were—for men, 118, 187, 105, with 3,558, 4,301, 2,684 days' unfitness for work; and for women, 239, 81, 39, with 9,682, 3,019, 1,375 days. Horace's line, *Desinat in piscem mulier formosa superne*, sums up the author's suggestion for remedial measures. Abandoning as impractical the idea of any fruit from a movement for individual chastity, he enters on an almost enthusiastic crusade for education in coitus condomatus, and gives very detailed information on its technique. To this measure he returns in a later chapter, when he is discussing the influence of excessive childbearing on the health of women; and though he is by no means oblivious of the social dangers which may follow, he looks more hopefully than we feel justified in doing for the growth of a new ethic which would protect the community from the risks to which the practice would certainly expose it. The results of the official regulation of prostitution the author regards very unfavourably, but he looks upon compulsory hospitalization of venereal patients, so long as they are infective, as a necessary adjunct to any preventive measures.

Under the heading of skin diseases we note the persistence of scabies, which, up to 1901, furnished not less than 3 per cent. of the cases in German public hospitals. The establishment of public baths as a factor in skin hygiene is fully discussed, and the author has no hesitation in acknowledging the indebtedness of Germany to Lieutenant Müller, whose "system" of gymnastics has shown there the possibility of effective bathing with a scanty water supply.

The section on diseases of digestion and metabolism furnishes occasion for an interesting discussion of the relations of dietetic custom to social organization. The improved earnings of the industrial classes have not remedied the tendency to under-nutrition, and the author looks hopefully to legislative re-establishment of an association of the housing of the working class with the possibility of gardening as an essential feature of the town plan of great industrial centres. A recession of the modern industrial development of agriculture seems to him in a certain degree necessary for national safety.

The section of fifty pages on childbirth and diseases of women raises so many points of interest that we select for mention, somewhat unfairly, the suggestion that, owing to the racial worthlessness of twins, multiple pregnancies should be ended artificially as soon as they are diagnosed, and a remark that, in "Yankee" practice, "it is an everyday affair, in spite of the illegality, for the doctor to be asked to procure abortion, a request which the majority of the doctors assent to without more ado."

Infantile diseases and mortality are the subject of a very detailed and comprehensive study which merits attention not only in Germany, where the general infantile mortality is relatively high, but also here. The various remedial experiments are carefully reviewed, but the author regards housing reform as the key to the solution of the problems.

The discussion of nervous and mental disease touches in no superficial way many important topics. The relations of alcoholism to the character and duration of labour and to housing on the one hand, and to degeneration on the other, are elaborately reviewed, and the importance of the influence of the psychopath in religion and politics, art and science is fully recognized. Space, however, makes it impossible to do more than mention these matters, and the points of social interest in surgical affections, cancer, and diseases of the eye and ear must also be passed by to give room for a slightly more extended notice of the final ninety pages of general discussion.

From the chapter on the social value of medical activity a few notes may be made regarding the German insurance system, in which as a factor of social amelioration Grotjahn is a firm believer. In 1909 the sickness scheme embraced 13.4 million persons, and the per head expenditures were approximately: for doctor, 5 marks; medicines, etc., over 3 marks; sick pay, 10 marks; maternity, 0.4 mark; death payments, 0.55 mark; hospitals, just under 3 marks. Under accident insurance the cost of treatment is about half a mark per head, and under invalidity, 1.2 marks. In spite of the well-known low economic status of the German practitioner, the outlays for treatment seem to exceed the scale allowed for in the British Act. Interesting tables are given of the accident experience of different occupations and of the various causes of invalidity in men and women. The author says that from former experience as "Kassenarzt" he thinks that three-fourths of the cases the doctor sees at the

[1] *Soziale Pathologie*: Versuch einer Lehre von den sozialen Beziehungen der menschlichen Krankheiten als Grundlage der sozialen Medizin und der sozialen Hygiene. Von Dr. med. Alfred Grotjahn. Berlin: August Hirschwald. 1912. (Sup. roy. 8vo, pp. 702. M. 18.)

surgery would get well without going to him if they had to pay either the doctor's fee or half the cost of their medicine; and, further, that:

The restriction of medicines to those needed for the longer and more serious illnesses would be an excellent means of rendering the funds healthy, and would restore the dignity of the insurance service and make possible the free choice of doctor, which is on many grounds urgently needed.

The chapter on the rationalization of human reproduction is summed up in the three following propositions:

1. Each married pair has the *duty* of raising as a minimum three children through the fifth year of life. 2. This minimum is to be aimed at even when the constitution of the parents renders defectiveness (minderwertigkeit) of the offspring likely; in this case the minimum is under no circumstances to be exceeded. 3. Each pair which is distinguished by special fitness has the *right* to exceed the minimum by about double, and for each child in excess to receive material compensation to be raised by a tax on single persons and on married pairs whose production is below the minimum.

In the concluding chapter on the social value of hygienic activities, the author passes in brief and tolerant review the various social "movements," even those with which he himself is not in agreement. After the relative import of means and men has again been mentioned, a glance is thrown forward to a millennium in which pathology by its development into orthodietetic, hygiene, and eugenic has achieved its own annihilation.

The elaborate bibliography is scattered through the volume and a sufficient index is provided.

DISEASES OF THE EAR.

DR. WILLIAM MILLIGAN and Dr. WYATT WINGRAVE, in their *Practical Handbook of Diseases of the Ear*,[2] lay particular emphasis upon the importance of the aural surgeon and the clinical pathologist co-operating to ensure accurate diagnosis and efficient treatment. To this end much space has been devoted to full descriptions of the morbid processes underlying affections of the ear, and the authors appear to assume that the general practitioner will be prepared to make routine microscopical examinations of discharges, and so on; the risk in giving such advice is that it may make the ordinary man despair, and deter him from making full use of a very valuable and instructive book. The sections dealing with ear disease from the practical side are well arranged and clearly written. The anatomical descriptions are lucid and adequate and well illustrated. The subject is dealt with in a manner at once comprehensive and thorough. There is an excellent chapter setting forth the different methods to be employed in examining the patient. The various instruments in general use are well described, both verbally and pictorially. The clinical aspects of disease are clearly portrayed, and the advice as to treatment—operative and therapeutic—is sound and in accordance with the best modern practice. Perhaps the best chapters are those dealing with the intracranial complications of middle-ear disease. The authors are strongly in favour of extensive decompression operations in otitic meningitis, whether serous or purulent. Dr. Purves Stewart has contributed an extremely useful chapter in which the part played by diseases of the ear in relation to general medicine is set forth. The last seventy pages are given up to the consideration of diseases of the nose and naso-pharynx so far as they have a special bearing upon diseases of the ear. Three operations for the relief of a deflected septum are described, whilst the various forms of rhinitis and the treatment of them are very fully discussed. The matter and the manner of the presentment of the subjects dealt with are alike excellent; but the perspective is, perhaps, sometimes a little faulty. The suppression of unessential details and the condensation of some needlessly diffuse descriptions would make the book the best of its kind with which we are acquainted.

THE HYGIENE OF THE SKIN.

WE have before us two books on the care of the skin and its appendages, each written by a physician of long experience in the treatment of its diseases. Both show, perhaps, a tendency to exaggerate the depth of the ignorance of the average educated man or woman who alone will be likely to read such books. Dr. ALLAN JAMIESON, however, believes that it is too readily assumed that every one can intuitively manage his or her skin, and has therefore written this small book on *The Care of the Skin in Health*.[3] The first part gives a brief but lucid account of the structure of the skin and hair, and of the functions of the skin, since a general conception of these matters is considered necessary in order to appreciate rightly the measures requisite to maintain the skin in health. The rest of the volume deals with the care of the skin, hair, and nails, and gives simple instructions as to diet and clothing. Not every medical man will agree with Dr. Jamieson's view that the use of soap is to be avoided except for the hands or for skin soiled by employment. Dr. Jamieson says that a hot bath (98° or over) should never be taken unless under medical sanction and advice, and a warm bath (85° to 95°) only under exceptional circumstances. As a rule, the temperature of the morning bath should be 56° to 80° F., and a medium temperature of 60° is regarded as an excellent average. Many would consider this too low for cleansing purposes without the use of soap. Detailed directions are given for taking the bath; subsequent massage with a roller belt and a massage glove is advised and the method described. The reader is also told how to trim the nails and how to brush the hair, and the proper way of applying pomade to the hair of the head and to the beard and moustache. The final chapter gives some hints as to clothing, and brief directions as to diet in regard to its bearing on the due conservation of the skin. Dr. Jamieson is a strong advocate of soured milk as a warder-off of the evil effects of advancing age upon the skin.

Dr. PUSEY, in his book on *The Care of the Skin and Hair*,[4] deals first with the structure and functions of the skin. Then follow chapters upon the care of the general health, with simple directions as to diet and exercise, upon baths and bathing, soaps, cosmetic powders, ointments and creams, and short descriptions of the commoner skin diseases. The later part of the book is concerned with the hair, its structure, and with its care in health, and the commoner affections of the hair and scalp. We note that Dr. Pusey does not object to the use of soap for the skin, nor to the hot bath nor to the cold bath. He adheres to what we believe to be a fallacious opinion—namely, that frequent use of water for the scalp is bad for the hair, and that the daily use of water without careful drying is a factor in the production of baldness. It goes without saying that in a book written by Dr. Pusey the information and advice are sound and good, but all the knowledge required by a healthy person for the maintenance of the skin in health could be profitably condensed into a much smaller space. There is much repetition in the book, and there are not a few contradictory statements. On page 163, for example, it is stated that atrophy of the skin, and not seborrhoeic dermatitis, is the chief cause of premature baldness; and, on page 167, that seborrhoeic dermatitis is probably the most important causative factor. Even the short descriptions of such affections as eczema, herpes, moles, milium, xanthoma, chloasma, etc., might have been omitted. It is true that Dr. Pusey disapproves of the mischievous habit of self-medication, and very rightly gives the lay reader no directions for the treatment of these skin troubles. But a person with a healthy skin has really no need to know anything of these affections.

NOTES ON BOOKS.

DR. ALVAH H. DOTY, the Health Officer of the Port of New York, has condensed much valuable matter into a comparatively small space in his book on *Prevention of Infectious Diseases*.[5] It is written from the results of his

[2] *A Practical Handbook of the Diseases of the Ear, for Senior Students and Practitioners.* By William Milligan, M.D., and Wyatt Wingrave, M.D. London: Macmillan and Co. 1911. (Roy. 8vo, pp. 625; illus. 293, and 6 coloured plates. Price 15s. net.)

[3] *The Care of the Skin in Health.* By W. Allan Jamieson, M.D., F.R.C.P.E., Consulting Physician for Diseases of the Skin, Edinburgh Royal Infirmary. London: Henry Frowde, Hodder and Stoughton. 1912. (Cr. 8vo, pp. 109. 2s. 6d. net.)

[4] *The Care of the Skin and Hair.* By Dr. William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois. New York and London: D. Appleton and Co. 1912. (Cr. 8vo, pp. 173. 2s. net.)

[5] *Prevention of Infectious Diseases.* By Alvah H. Doty, M.D., Health Officer of the Port of New York. New York and London: D. Appleton and Co. 1911. (10s. 6d. net.)

own experience and observation, and he contends that many current notions as to the causes for the spread of infectious diseases are false and misleading. He accepts the view, now generally adopted in this country, that the closing of schools during epidemics is useless, and should be replaced by a careful daily inspection of school children at such times, carried out by physicians, not by school teachers. The volume contains chapters on small-pox, yellow fever, typhus fever, cholera and plague. Though specially written from the point of view of the port medical officer, each chapter contains most useful guidance for all who may be called upon to deal with outbreaks of these diseases. Nearly one-third of the whole book is devoted to a consideration of disinfection and disinfectants. Dr. Doty does not hesitate to condemn the sale and use of many substances which the public and indeed many sanitarians have erroneously regarded as means to prevent the transmission of infectious diseases. Throughout the book the routine use of the thermometer in detecting the presence of infectious disease is advocated, and in addition a short chapter is devoted entirely to the clinical thermometer as an important factor in the modern inspection of suspects or persons held for observation. The author has carried out a series of tests extending over a period of many years, and including thousands of observations on the temperatures of contacts and suspects; careful attention was paid to all details necessary to secure correct results. Apart from the value of these observations as narrated in this chapter in regard to quarantine work, Dr. Doty has made some interesting investigations concerning variations of temperature in the normal healthy body. The principles upon which sanitary science is founded are clearly expounded in this instructive volume, which forms an excellent contribution to public health literature.

Drs. H. DOMINICI and A. A. WARDEN have now issued a reprint of a paper on *The Technique and Results of Radium-Therapy in Malignant Disease*,[6] which was read by Dr. Warden before the Section of Radiology and Medical Electricity at the Annual Meeting, 1910, by way of accompaniment to a demonstration which Dr. Warden then gave on Dr. Dominici's behalf. On that occasion a number of patients were shown, and the reprint contains pictures of the patients before and after treatment. The new edition has been prepared in order to bring up to date the history of the seven cases which were then described as showing such satisfactory and complete local regression as to justify the word "cure." During the time that has since elapsed, though two of the patients are dead, none of them have exhibited either recurrence or metastasis of the growths treated. The two deaths were due, one to acute pneumonia and the other to pulmonary tuberculosis. The growth in one of the cases was lymphadenoma, in two sarcoma, and in four epithelioma.

Popular taste has always been a very variable quantity, and fashions in literature change almost as quickly as fashions in art or music. But there is one type of fiction whose charms never seem to pall; and a good detective story can always be certain of finding an appreciative public. Mr. CHARLES ERNEST STERREY'S novel, *The Voice from the Night*,[7] should therefore be popular amongst that class of readers who love to be amused and excited by thrilling accounts of hairbreadth escapes and unusual adventures. The plot turns on the trial and unjust condemnation of a young doctor for murder, and on the efforts made by the hero, a brother physician and his bosom friend, to track down the real transgressor—a task which takes him as far afield as Venezuela, and nearly costs him his life into the bargain. There is little or no attempt at character drawing, and much of the dialogue is spoilt by the extremely stilted and flowery language in which the personages of the story are apt to indulge in moments of emotion; but the secret is well kept to the end, and the dramatic conclusion proves once more the truth of the old saying, "Who seeks adventures finds blows."

It is difficult exactly to appraise Miss HONNOR MORTEN'S book, *Child Nurture*.[8] It is something of a pot-pourri of useful information, sentimental gush, and unsound pathology. The impression which its perusal leaves upon our mind is one of distrust with so much meddling with the young human animal, and the writer does not seem to have come to any very clear conclusions upon many points. The useful information would be more useful if exact references to authorities had been given. The gush—such as the pages of letters from a doting young mother over her "treasure"—might well be spared, and the pathology and much of the domestic medicine are likely to do more harm than good. Nevertheless the book may be useful, but it would have been none the less so had it been boiled down to a third of its present bulk. The author denounces the present system of compulsory education in the United Kingdom, because "The children are forced to go to school between the ages of 5 and 14, not only if they dislike it, but when the parents do not approve"; but we are not told what alternative, if any, she has to offer.

[6] *The Technique and Results of Radium-Therapy in Malignant Disease.* By M. Dominici, M.D.Paris, Chef du Service de Pathologie Laboratoire Biologique du Radium, and A. A. Warden, M.D.Glasgow and Paris, Visiting Physician to the Hertford British Hospital. London: J. and A. Churchill. 1912. (Medium 8vo, pp. 29; figs 24. 2s. net.)

[7] *The Voice from the Night.* By Charles Ernest Sterrey. London: George Allen and Co., Ltd. 1912. (Cr. 8vo, pp. 446. 6s.)

[8] *Child Nurture.* A Handbook for Parents and Teachers. By Honnor Morten, author of *The Nursery Nurse's Companion, Consider the Children, Health in the Home Life*, etc. London: Mills and Boon, Limited. 1911. (Post 8vo, pp. 251. 3s. 6d. net.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE seventy-first annual meeting of this association was held on July 11th and 12th at the Guildhall, Gloucester, Dr. JAMES GREIG SOUTAR, of Gloucester, the new President, in the chair.

Presentation to Dr. Hubert Bond.

The first morning was occupied with the business of the association, and the first function in the afternoon was to present to Dr. Hubert Bond, Commissioner in Lunacy, an illuminated testimonial from the members expressing great admiration for his work as Honorary General Secretary of the association for seven years, during which time there had been a great accession of new members.

Vote of Thanks to Retiring President.

The thanks to the outgoing President (Dr. William Dawson, of Dublin) were very cordial, and were proposed and seconded respectively by Dr. MCDOWALL and Dr. PERCY SMITH, the latter remarking that the association was very fortunate in having had two Commissioners in Lunacy as presidents in succeeding years. Dr. DAWSON, in acknowledging, said he was proud to have been President in a year which had seen the initiation of a movement to provide clinics in psychiatry and improve the conditions of service of asylum medical officers in the kingdom.

New President's Address.

Dr. SOUTAR then took the chair and proceeded to deliver his address. His first words were those of welcome to Gloucestershire and to its city, which was one of pilgrimages. Seventy-one years ago six men met in Gloucestershire and laid the foundation of the present association. He said he could not, in this address, bring to the association fresh tidings from the laboratory, illuminating generalizations from the wards, nor any new theory to replace the old, which had had holes knocked in it by collision with rugged facts. He had not even new views on classification, and would only say that the more detailed it became, the greater seemed to be the practical difficulty in pigeon-holing cases. He proposed, therefore, to confine his remarks to two drifts of opinion which seemed to be at present circling among psychiatrists. The first was that their Continental brethren were outstripping Britons in the study of the speciality. But he thought the validity of that statement might well be examined. He quoted from Sir Thomas Clouston's *The Hygiene of Mind*, and after setting forth the vast range of subjects which required to be studied he again asked the author's query, "Who is sufficient for these things?" The answer was, No person, no people, no period. He believed that when the reckoning was made there would be found, among valued and welcomed contributions in foreign coin, bits of British gold, bearing dates of our own times, of days gone by, and of others yet to come. He recommended the perusal of the historical part of Clouston's article, "The Diploma in Psychiatry," in the *Journal of Mental Science*, April, 1911. Among the members of the society were a large number who were interrogating the function of every organ of the body, stimulated thereto by the suggestion that in many cases the wreck of mind was but a manifestation of antecedent faults in metabolism which

might be found to be remediable or avoidable. But it was not justifiable to go to the State and ask for money to gratify the insatiable inquisitiveness of the scientific mind. Such a request would be met by the scientific inquiry—not, What are your theories, your hypotheses, your speculations, your hopes? but, Upon what already ascertained facts do you base them? If it could be shown that what had been done was justified by its practical utility—that the laboratory and the clinic had furnished knowledge which made for the mental health of the people—then their case was won, and they would have ranged on their side the humanitarian instinct. But had the stage been reached in psychiatry when that could be promised? Were they not rather inspired by hopes than supported by assurances which could be formulated and submitted in a convincing way? He said that the fact that they did not possess the highly equipped State clinics and research laboratories which were to be found elsewhere must not be taken as indicating want of sympathy with research, or as failure to promote treatment, but rather that it had not yet been shown that the benefits from them were commensurate with the financial burden entailed. His remaining word concerned the diploma in psychiatry. It was altogether good that further opportunities should be afforded for study under competent teachers, but it was not possible to include all the subjects which bore on the marring of the mind, and so a selection had to be made for the purposes of this diploma. He thought the idea should not be entertained that these were the only lines which led to effective work in this special line, and he reminded the meeting of the practical-minded general practitioner who, while laying no claim to the title of specialist, was eager and ready to apply the knowledge given to him. He deprecated the diploma being regarded as essential to candidates for the higher appointments, or to him who aspired to consulting practice. The diploma could, at most, be but a sign of a varying degree of acquirement within a narrow range of that wide field of knowledge which was applicable in their work, and it ought not to be considered as the sole passport to success.

On the proposition of Sir GEORGE SAVAGE, seconded by Dr. SYDNEY COUPLAND, the President was heartily thanked for his address.

Appendicitis in Asylums.

Mr. J. F. BRISCOE read a paper entitled Appendicitis in Asylums, which was published in the JOURNAL of July 20th, p. 118.

Sir GEORGE SAVAGE confirmed the view that appendicitis was very uncommon in asylums, and said that during his seventeen years at Bethlem Asylum he saw only one case, and that was in a house-physician. The discussion was continued by Mr. BUCKELL, Dr. PERCY SMITH, Dr. BLAIR, Mr. WALLACE, Mr. HOWELL and Dr. MENZIES; and Mr. BRISCOE replied.

Bacteriology of Diarrhœa and Asylum Dysentery.

Mr. MCKINLEY REID read an exhaustive paper on the bacteriology of over forty cases of diarrhœa, with special reference to asylum dysentery. He divided his cases clinically into four groups: (1) Acute dysentery; (2) chronic dysentery; (3) severe diarrhœa; (4) slight diarrhœa. He reported that from faeces of patients suffering from acute dysentery one or other of two atypical strains of the Flexner bacillus had been isolated on sixteen occasions, and *B. morgan* No. I twice. He detailed the organisms found in the remaining cases, and compared the cultures made from stools with those obtained from organs in fatal cases. He also gave the control results, and the agglutination tests with patients' serums and rabbit Flexner immune serum. He referred to the toxicity of cultures in guinea-pigs, and reviewed the literature on the bacteriology of dysentery. The paper was discussed by Dr. MENZIES, Dr. POPE, and Dr. GOODALL, and the author replied.

Annual Dinner.

The association's annual dinner was held at the Guildhall, Gloucester, when the High Sheriff of Gloucestershire and the Deputy Mayor of Gloucester were present.

The Mental Deficiency Bill.

The Friday sitting was devoted to a discussion on the Mental Deficiency Bill. Dr. HYSLOP, in introducing the discussion, said that legislation was urgently needed for 66,509 of the 149,628 mentally defective persons in England and Wales alone. In Scotland 34.57 per cent. of the defective were estimated as urgently in need of provision, while in Ireland the corresponding figure was 66.06 per cent. The Royal College of Physicians' definition of the feeble-minded was "persons who are capable of earning a living under favourable circumstances, but are incapable, from mental defect existing from birth or from an early age, (*a*) of competing on equal terms with their normal fellows, or (*b*) of managing themselves and their affairs with ordinary prudence." But this he thought hardly sufficient to form a basis for legislation, and it was also apt to cause many misgivings and apprehensions in the public mind, inasmuch as it might include many who might with justice be excluded from the provisions of any bill involving any deprivation of liberty of the subject. In the history of every prophylactic measure adopted for the benefit of the greatest number there had, he said, ever been much opposition and delay, owing to fetish worship of the liberty of the subject. He regarded as one of the most important parts of the bill that dealing with the matter of preventing procreation by the mentally defective. Those who concerned themselves with the problem of degeneration knew that much of the defective-mindedness so prevalent might in the future be obviated. In discussing the marriage laws he expressed the opinion that, just as the habitual drunkard was deprived of his liberty, so the existence of the alcoholic habit should be a bar to matrimony. Temporary and developmental attacks of mental deficiency were still inadequately provided for, and it was necessary to fall back upon the provisions of the Lunacy and Idiots Acts. Dr. Hyslop then proceeded to discuss the question whether the bill was sufficient protection for existing institutions for idiots and imbeciles and for other institutions in which defectives were at present treated. He considered that the liberty of the subject would be as efficiently safeguarded under this bill as it now was under the provisions of the Lunacy Acts and the Idiots Act, and concluded by a detailed reference to administration and economy.

Resolutions.

Dr. WILLIAM DAWSON (ex-President) brought the lengthy discussion to a head by proposing:

> That we, the Medico-Psychological Association of Great Britain and Ireland, cordially endorse the action of our Irish Division in endeavouring to have the provisions of the Mental Deficiency Bill extended to Ireland, and we would urge upon the Government the modifications necessary for that purpose.

He pointed out the great need there was for such provision in Ireland, for in that country there was only one institution for imbeciles and idiots, and that was a voluntary one, able to take only about one hundred patients.

This was seconded by Dr. DRAPES, and carried unanimously.

Dr. MIDDLEMASS proposed and Dr. MACRAE seconded:

> That a deputation, to be chosen by the President, Past-President, and President-elect, be appointed to wait on the Home Secretary and any other Government official whom it is thought desirable to interview, to lay before them the views of the association, so far as they have been expressed, respecting the Mental Deficiency Bill.

The resolution was carried unanimously.

Entertainments.

The social arrangements made by the local members included a pastoral play, *The Fantastics*, at Barnwood House (private asylum).

IN the annual report for the year 1911 the authorities of the Queen's Hospital for Children supply a careful statistical analysis of all cases treated in the wards. The medical cases which recovered and died respectively are classified according to the diseases which they represented, and the surgical cases are similarly treated. Certain conditions, such as empyema, appendicitis, intussusception, and tuberculous peritonitis, are still further analysed, the result being to make the returns relating to in-patient work much more interesting than are those commonly supplied in the annual reports of hospitals.

Nova et Vetera.

MODERN FAITH HEALING.

(Continued from p. 252, Vol. I, 1912.)

THE MARQUIS DE PUYSÉGUR.

Mesmerism did not die with Mesmer. The prophet's somewhat tattered mantle fell on some disciples, but the pure gospel as preached by the Master was modified in development. Not that mysticism was eliminated from it, but the ritual with which the patients around the tub had been impressed was discarded. One of his most fervent disciples was Puységur. A short sketch of his life will enable the reader to understand the character of the man.

Armand-Marie-Jacques de Chastenet, Marquis de Puységur, was the grandson of the Marshal of the same name who fought at Fontenoy. He was born in 1751 or 1752 and in 1768 became an officer in the artillery, where, owing to family interest, he rose more rapidly than was customary at that time. In 1782 he saw service in Spain and acted as Major of the Trenches at the siege of Gibraltar. In 1786 he became Colonel of the regiment and Commandant of the School of Artillery at La Fère. He left the service of his own accord in 1792. He had previously been fascinated by the doctrines of reform which led to the Revolution, but, being a man of moderate character, he took no active part in that upheaval. He went to live on his estate at Buzancy, near Soissons. He was accused of corresponding with his two younger brothers, who were *émigrés*, and was consequently kept in prison at Soissons with his wife and children. How he escaped proscription and the guillotine does not appear. After the Revolution he devoted himself to the service of the members of his family as they came home from foreign countries. He bought back a considerable part of the possessions of his ancestors and divided the whole with his relations. He also sheltered many of the victims of political persecution in France. In 1800 he was named Mayor of Soissons, but resigned the office in 1805. He had married a Mdlle. de Saint James, daughter of the Treasurer-General of the Navy, and with her received a dowry of £48,000. When his wife's father became bankrupt, Puységur returned the whole of this money. On the return of the Bourbons and during the Restoration he received none of the rewards and the distinctions which were showered on the Royalists. The author of his *Life* in the *Biographie Universelle* seems to think that he was badly treated, but it would appear in the first place that he had not asked for anything—and it is well known that in such matters he that does not ask need not expect to receive; and in the second place, from the fact that he lived without molestation in France throughout the Revolution, it may be inferred that his opinions could scarcely have been of a kind that would entitle him to the favourable notice of the representatives of the ancient *régime*. Notwithstanding this he got his promotion to the rank of Lieutenant-General in due order of seniority. At the coronation of Charles X at Rheims, he established himself on a public promenade in a tent which had been used by his father at Fontenoy. It had an inscription inviting all passers by to pay him a visit. The place he chose for camping out in this fashion was very damp and he contracted an illness which carried him off at Buzancy on August 1st, 1825.

To us Puységur is chiefly interesting from his connexion with Mesmer and animal magnetism, to which he devoted a large amount of his time, and on which he wrote many books, beginning with *Mémoires pour servir a l'histoire et a l'établissement du magnétisme animal* (1784). A second edition appeared in 1805. Another work, entitled *Du magnétisme animal considéré dans ses rapports avec diverses branches de la physique*, appeared in 1804 to 1807. It was reprinted in 1820 with notes by David d'Epresmenil. Among the other writings of Puységur are: *Recherches, expériences et observations physiologiques sur l'homme, dans l'état du somnambulisme naturel et dans le somnambulisme provoqué par l'acte magnétique* (1811); *Les Fous les insensés, les maniaques et les frénétiques ne seraient ils que des somnambules désordonnés?* (1812). *Les vérités cheminent, tot ou tard elles arrivent* (1814). He was also the author of numerous articles in the *Bibliothèque du Magnétisme Animal*. This list is sufficient evidence of his literary activity in defence of mesmerism. In addition to this work of propaganda, he was the author of plays: *La Journée des Dupes* (1789); *L'Intérieur d'un Ménage Républicain* (1789); *Le juge bienfaisant* (1799).

There is no doubt that Puységur was a man of true philanthropy, and that he took up animal magnetism in the hope of benefiting his fellow men. On his return from Spain, about 1783, he had followed with his youngest brother the lessons of Mesmer at Paris; he was one of the subscribers who paid 100 louis to be initiated. He proceeded to apply the doctrines on his estate at Buzancy. Transforming his house into a kind of hospital, he treated all the sick who came to him, and as the number became too great for him to touch them all he magnetized an old elm tree in the middle of the village. In two months Puységur is said to have wrought 62 cures, and 300 patients were down for treatment when, at the end of June, he was obliged to join his regiment at Strassburg. It was during this time that he made the discovery of somnambulism, with which his name is identified. Mesmer, indeed, had observed the phenomenon, but does not seem to have perceived in it any significance, and later was vehement in condemnation of it. In Puységur's hands it transformed the method. He gave up the complicated apparatus of the tub and magnetized conductors and substituted for them the use of touches, and especially the exercise of the will. After Mesmer left France, Puységur became the leader of the school, and, owing to his impulse, "societies of harmony" were founded at Strassburg, Metz, Nancy, and elsewhere in France. The Revolution did not interrupt his work. His house remained always open to patients and to refugees. Under the Empire he published new editions of his first writings, and from time to time reports of his chief cures. During the invasion of 1814 he was specially protected from interference by the foreign soldiers.

It is not always easy to understand Puységur's attitude towards animal magnetism. In his *Mémoires pour servir a l'établissement du magnétisme animal*, the preface of which is dated December 28th, 1784, he begins by referring to the conclusions of the commissions, which were given in full in the Journal of January 13th, 1912, p. 79; January 20th, 1912, p. 133; January 27th, 1912, p. 199; February 3rd, 1912, p. 249. These conclusions were that the effects of mesmerism were due to imagination, to imitation, or to the pressure made on certain parts of the body. He goes on to speak of the momentary ridicule with which so important a decision had covered him who had been one of the first to express his conviction of the reality of the effects of animal magnetism. His book is an appeal against the discredit which he evidently feels he has incurred. It is also an apologia for Mesmer, whose triumph he hopes may be hastened by his efforts. On the other hand, in his *Magnétisme animal* (1807) he gives an account of his discipleship under Mesmer, which suggests that he got nothing in exchange for his money. When the prophet of animal magnetism arrived in Paris in 1782, circumstances had prevented Puységur from following the study of physics and chemistry, which he had only skimmed in his youth. At first, when listening to Mesmer, he strove to connect his early knowledge with the new "discovery." At first he was very sceptical:

> With my small knowledge whether prejudice, incredulity, or an idea of the influence exercised on my imagination, I was for a very long time incredulous as to the reality of animal magnetic action. My incredulity went so far that seeing my two brothers produce effects analogous and even the same as those wrought by M. Mesmer two years before me, I was rather tempted to accuse them of quackery or of being the sponsors of a quack than to yield myself to that which I looked upon as a weakness of mind. Seeing nothing in short in all that which recalled the sparks of electricity, and my beloved phosphoric and vitriolic acids, I concluded with entire satisfaction to myself that there was nothing but error and illusion in all that I had seen. Nevertheless, carried away by a multitude then as thoughtless as myself, I agreed to give my hundred louis to follow the course of M. Mesmer in which we were assured he would reveal his secret and the means of doing very extraordinary things. When I say that at the end of the course I was no wiser than before, and believed just as little, is to relate the history of my ninety-nine fellow students. I knew so little about it, that having to leave two days afterwards to pass some time on my estate I went one morning mysteriously to visit M. Mesmer, to ask him how I should go about it to magnetize a tree and by what procedure I should succeed in causing the emanation of my fluid, and I even remember not having got

much enlightenment from him, whether the fault was his or mine.

At Strassburg in 1785 he gave a course of mesmerism which was attended by fifteen or sixteen pupils. He reveals the secret of Mesmer, which he says was discovered by his brother. He says:

It will doubtless surprise people that after six weeks of observations and special interviews with me, none of my disciples had either guessed or seen the means I employed to work the effects of which they had all seen the results. That means so simple indeed will always escape the understanding. There is only a single man who to my knowledge has discovered the procedures of M. Mesmer, the third or fourth time he had seen them used, and that man is my brother, a naval officer known by the name of Chastenet. This perspicacity in him is the more surprising since the nature of his studies and the useful applications which he made of them to matters connected with his profession, allowed him then to perceive reality only in mathematical results. He discovered then, through the chaos of the first tub, the causative principle of their effects. The next day he went to communicate the fact to M. Mesmer. The latter, while trying to hide his surprise, showed much displeasure and still more anxiety as to the bad results that might follow for him as well as for his doctrine of a too premature manifestation of the interpretations that might be made of it. My brother, while approving his motives, promised to keep the most inviolable silence with regard to everything he discovered and observed, and his word was kept by him so religiously that, notwithstanding the intimacy of our mutual affections, he had never confided the matter to me.

Puységur gives an account of some of his "cures." His first case was one of pneumonia. The patient was a peasant, aged 23, who had been ill four days with pain in the side and spitting of blood. Puységur magnetized him, and to his surprise saw the man at the end of a quarter of an hour go peacefully to sleep without convulsions or pain. The narrative goes on:

I pushed the crisis which made him giddy. He spoke and busied himself out loud about his affairs. When I thought his ideas were of a nature to affect him in a severer manner, I stopped them and sought to inspire him with more pleasant ones. No great effort was required for this. Then I saw him content imagining that he was shooting for a prize, dancing at a feast, etc. . . . I encouraged these ideas in him, and in that way I forced him to move about a good deal on his chair, as if he were dancing to a tune, which singing (mentally) I made him repeat aloud. By this means I brought about from that day in the patient an abundant sweating. After an hour of crisis I soothed him and went out of the room. . . . He slept the whole night through, and on the following day, no longer remembering my visit of the evening, he told me of the improved state of his health, etc. . . .

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The good which I did this patient encouraged several patients to come to consult me. A woman of twenty-four suffering in the lower part of the abdomen for fourteen months after a difficult labour, in less than six minutes experienced a spasm without convulsions or apparent marks of pain. Only when my hand was put near the painful part I saw her shudder slightly; already twice I have made her experience the same effect, the consequences of which leave behind them neither weakness nor unpleasant memory.

Another young man of seventeen found himself tormented the day before yesterday by a very violent fever with a severe headache; I went at once to magnetize him. I was unable to give him any relief the whole day although I used every effort morning and night. Yesterday morning I somewhat relieved his headache, but as soon as I left him it returned. At last yesterday in the evening I was able to bring about a peaceful sleep. Nevertheless the night was not good. This morning I produced on him the same salutary effect, but it would be necessary that I should not leave him for his headache begins anew on his awakening as soon as I leave him.

In order to be able to produce on all these poor people a more continuous effect and at the same time not to exhaust myself with fatigue I decided to *Magnetize a tree* according to the procedures indicated by M. Mesmer, and after having fastened a cord to it I tried its effect on my patients.

* * * * * * *

A girl of 26 belonging to the neighbourhood, suffering for nine months from fever and continual pain in the kidneys, stomach, and head, came with all possible devotion to find me in my patient's house. I sent her to my tree. I made the chain with the two of them. She found herself singularly relieved of all her pains except the fever, etc.

In another letter Puységur says, speaking again of Victor, his first patient, whose case has already been referred to:

It is with this simple man, this peasant, a tall robust man, aged 23 years, now bent by disease or rather by sorrow, and on that account even more liable to be moved by the agent of Nature, it is with this man I say that I instruct and enlighten myself. When he is in the magnetic state he is no longer a simple-minded (*niais*) peasant, hardly knowing how to answer a question, a being I do not know how to name: I do not require to speak to him. I think in his presence and he understands and answers me. Does anyone come into his room he sees him if *I wish*, speaks to him, tells him things that *I wish* him he should say to him, not always such as I *dictate* them to him but such as the truth requires.

Victor had a hidden sorrow caused by quarrels with his sister about a legacy left by his mother. While in the state of somnambulism the man was able to say where the document was to be found, and at once his face took on "an expression of serenity and joy." Commenting on this case, Puységur says that the man was forced to give him a most important paper, "because he truly and strongly desired to find the means of making the man happy." The thought occurs to him that possibly one can *wish* evil as *strongly* as good, but as to this he says he has no knowledge. He sees, however, that if this were the case animal magnetism might be a formidable weapon in the hands of unscrupulous persons. We know the dread with which Mrs. Eddy regarded what she called "malicious animal magnetism." Puységur asked his subjects themselves when in magnetic crisis for help in this difficulty. All assured him that in that state they preserved their judgement and their reason, and added that they would quickly perceive any evil intentions that might be entertained with regard to them. In that case their health would suffer, and that would cause them at once to awake. Nevertheless, Puységur could not rid himself of some uneasiness as to the possibility of "the most beneficent *discovery* in existence" being abused. He finds comfort in the thought that:

There will always be at least in the employment of animal magnetism the advantage that one has not to fear surprise. One cannot be magnetized *against one's will*, and confidence in a magnetizer must always be a preliminary of the help looked for from it.

In a supplement to the book Puységur says that while it was in the press Victor came to Paris to take charge of one of his brothers on the journey. He said that eight to ten days before his departure from Buzancy he had had a bad fall, and since then had suffered considerably from his head, and had febrile attacks every evening. His indisposition induced Puységur to make him stay in the hope that with the aid of magnetism he would be promptly cured. He threw him into crisis, and the man perceived that his headache would not pass off without bleeding from the nose and mouth. The next day, after he had had a good rest, he told Puységur while in the magnetic state that it was absolutely necessary he should be bled from the left arm. As soon as he was bled from the left arm the head on the same side ceased to trouble him, but he continued to feel pain on the right side. That evening he was again magnetized, and Puységur learnt that his suffering would cease spontaneously after a flow of blood and water, which would come out of his mouth. He indicated the moment when this would happen, and it took place accordingly. Puységur believed the man to be entirely cured, and to assure himself of the fact he magnetized him again, when the man said there still remained blood in his head, and that it was by the nose that he had to get rid of it. He indicated the day when this prediction would be fulfilled. In the meantime, Puységur gave a drawing-room demonstration of the case, but this failed to convince those present. He felt this bitterly, as will be seen from what he says about the matter:

It appeared to me that the opinion of M. de . . . had inspired the ladies with doubts. They believed that they had deceived themselves and my position became very disagreeable. Mgr. the Duke of . . . was a witness of this scene, and in changing his opinion about me I became a contemptible man who had tried to abuse the credulity of the most straightforward man in the world.

Victor was taken to the same house on the day he had foretold that he would bleed from the right nostril. Puységur was coldly received and offered to submit his patient to examination by a surgeon. The surgeon first of all said that he saw pomade in the nose, a moment later he extracted a little dirt which he said was a fatty body. Puységur proceeds:

I was on thorns on account of so insulting an inquiry [it may be remembered he himself had proposed it] to such a point that I could not even laugh with pity at this decision of the doctor.

[He does not tell us what there was to laugh at.] I force my patient to bear everything; they made him open his mouth and finally with the exception of the fatty body nothing was found. At half-past twelve Victor announced that the blood was about to flow. I laid him on the floor, a dish was brought and after very slight efforts (!) the blood came out through the nostril indicated. I hear it said around me that this blood is of a singular character and that for a burst abscess its colour was very pure. [It must be noted that nothing has yet been said about an abscess; and it may here be said once for all that Puységur's descriptions of his cases, besides being extraordinarily diffuse, are so confused that it is difficult to make anything of them.] The doctor confirms this opinion. I answer that I do not know how the blood should be; that probably it cannot be otherwise than it is since it is Nature alone that is ridding itself of it. After the bleeding of the nose came expectoration mixed with a slight quantity of blood, as the patient had foretold, and finally the prediction was completely fulfilled. Between half-past twelve and one all was over. It might seem that after such a fact there was nothing to be done but to seek the cause which had brought it about and that its reality was fully established. Not at all. I see around me the same distrust; there was the greatest unwillingness to question me, and I was confounded by the embarrassed and dissatisfied air of all the witnesses of this scene. Gradually the salon became empty. Madame de . . ., busy over a drawing, said nothing to me. One might have said that I inspired her with the greatest pity. I was about to leave confused, like a juggler when he has missed his trick, when Madame de . . . said to me that Victor, who was still in the magnetic state, had asked for a private interview with her. I went into the other room, and I should never have known anything of this conversation but for another thing that occurred to Victor which I will now relate. M. de . . ., the same who had been so unsuccessful in the experiments made out of curiosity on the Thursday, also asked me for a secret interview with Victor. I consented all the more readily that the truth which guided me did not allow me to fear anything from these things. This second conversation was longer, and when it was finished I woke Victor and went out of the room without being put to the trouble of any confidence, for those present seemed to take no notice of it. It appears to me nevertheless that, even as a simple trick, that which I had done was of a kind to deserve a little applause. However this may be, my man was cured, and that was the thing that chiefly interested me. I did not see him again during that day.

The next day Victor was given permission to go about Paris, and did not turn up that night. It was unkindly suggested that he had got drunk and could not find the house. The prodigal, however, returned in the afternoon. After much questioning he told Puységur that in the two private conversations the suspicion had been expressed that he lied, that he had purposely made his nose bleed, that they had wished to make him open his eyes, that all sorts of means had been used to that end, that it was in vain that he assured them that in the state in which he was he could not lie, that nothing was more true than his heart and his words, that he had not been believed, that they had left him saying that he was a sly customer and many things of that sort; that in short all the torments which he had been made to endure were the sole cause of the state in which he was.

Victor evidently fooled Puységur to the top of his bent. One has to read the story as told by the credulous mesmerist to get an idea of the insolent familiarity with which the peasant treated his master, and the foolish simplicity of the Marquis. Puységur, commenting on the case, makes the significant remark that the history of Victor should be a lesson to every magnetizer not to attempt experiments indiscreetly, and without having taken all possible measures to make them succeed and to establish their genuineness. He says:

> When you present to any one the phenomena of magnetic somnambulism, take care that the persons to whom you communicate that superb experience have already by themselves some preliminary notion of somnambulism, so as not to offer all at once to the incredulity a prodigy too difficult to conceive. . . . Do not expose the experiment to contradictions and efforts at reputation which are only directed to bring it to nought.

In other words, make sure that the persons to whom you show the experiments are believers before they see them. This is sound advice for the purpose, and may be commended to all faith healers of whatever shade. It is the refuge of all practitioners of these occult arts of healing, the essential feature in them all being belief on the part of the patient. To make assurance doubly sure, unbelievers should be kept aloof. It is the presence of unbelievers that is alleged by the spiritualists as the cause of the failure of their manifestations. Mesmer himself accounted for it by the existence of an antimagnetic quality in certain individuals. Puységur says the ablest physicist would be reduced to confusion if he operated before persons who, instead of being attentive to his operations, busied themselves in breaking his machines and his instruments. But to make this argument of any value or the analogy applicable, it must be assumed that want of faith in the people looking on at a physical experiment makes it fail. Physical and chemical experiments will go on quite regardless of "antimagnetic" qualities in the onlookers.

Several other cases are given. There is that of Henry Joseph Claude Joly, aged 19, who had been deaf for ten years. He remained under the hands of Puységur seven days and then went home completely cured. Indeed, so perfect was the cure that, however low was the voice in which he was addressed, he thought people were screaming into his ears. This, in a profane mind, would suggest that he had been too much cured. The interesting part of the narrative is that in a state of sonnambulism he told Puységur he had an abscess in the head, and that he would have to suffer much before he could get rid of it. "If it falls into the throat," said the intelligent patient, "I shall die, but if it comes out by the nose I shall be cured." A day or two later he said he felt the abscess dividing, and foretold that he would pass it by the nose on two occasions. After a great deal of trouble he passed by the nose whitish matter of the size of an egg. Further, Joly told them that he no longer suffered from a double hernia, which had caused him much inconvenience, and that since his return he had ceased to wear the double bandage which he always had worn before. It is curious that Puységur says nothing of this rupture, but the mention of it is another instance of the fact, which can be verified in any quack advertisement, that the persons who were cured by these remedies are pathological museums.

Another case is that of Agnes Remont, who, after a terrible fall on to her head into a cellar, had vertigo, convulsions, and a commencement of bleeding of the nose, "which, having stopped, would infallibly have formed a deposit (abscess) in her head." She foretold that she would be cured after three bleedings of the nose, and this prediction came true. Puységur goes on to say that in future it will not be enough for physicians only to make use of their theoretical knowledge. They must, besides, use personal efforts, and it will be from the greater or less perfection of their animal electric machine—in other words, of their faculties—that their success in diseases will depend. This, he affirms, is not done by sorcery or divination, but by means of a sensation peculiar to them. Puységur asks his somnambules about this, especially Joly, who said it was a true sensation that he felt in a part corresponding to the part which suffered in one whom he touched. Joly told him that the hand of the somnambule goes naturally towards the seat of disease in a patient, and he could not be deceived in this any more than he could in carrying his hand to the place in which he himself was suffering. As to the foretelling of sufferings, he said it was more than foreseeing; it ought to be called "foreknowing, or rather forefeeling." "I feel beforehand," he said, "the ill that is going to happen to me, and as I am not far from cure I forefeel pretty nearly the moment of it as being bound to happen at the time when I forefeel that my sufferings will end." This puts one in mind of Bardolph's famous definition of accommodated: "Accommodated, that is, when a man is as they say, accommodated, or when a man is being whereby a' may be thought to be accommodated, which is an excellent thing."

Another case is that of Philip Hubert Vielet, a schoolmaster, aged 36 years, who had suffered four years from disease of the chest and a complication of disorders. In magnetic crisis he said a healing work was going on within him; that his oppression at the stomach was caused by an abscess at the pylorus and in the hypochondria, and that his nerves were severely irritated thereby. He had besides an abscess in the chest. He foretold that he would get rid of the abdominal trouble by the bowel, and of that of the chest "by a vomica which he would spit up." These predictions were fulfilled, the matter brought up from the chest being as black as ink, but in a few days he announced that new humours had gathered at the seat of his first disease.

At Puységur's request he wrote a report of his case,

which is so delightful a piece of self-revelation that we give it in full length:

I have seen during a long time things which have seemed to me so extraordinary in cases of magnetic crises produced by sensations that I have resolved in this crisis in which I now am to set down the facts which have occurred in regard to me, the present, the future, and the result. I say that during the last four years I have consulted a number of physicians who without knowing the source of my ailment have made sexagenarian (*sic*) experiments on my body without succeeding in giving me relief. I say that they have on the contrary fixed the disease more and caused abscesses of the most considerable size. It is in this somnambulistic sleep that I know, that I see, that I distinguish, the causes of this event more surely than any physician could. That is what I dare to say positively.

I say that the first cause of my disease comes from an inflammation of the chest produced by work and anxieties, which only called for emollients. But bleeding, emetics and purgatives were employed, which aggravated the evil, and made the inflammation degenerate into several abscesses of which one vomica was in the lungs, another on the pylorus of the stomach; lastly, another attached to the spleen. They might have employed for this condition diluents and enemas composed of mallow and other narcotics. On the contrary, a different course was pursued. Soap, salt and other astringents were administered; drastic medicines; too cold baths. Finally they restrained my person to dry the nerves and paralyse them. Of all the medicines that have been used, I only see *Aillult* powders, which I employed particularly, which guided my abscesses to the point of preventing their increasing. Nevertheless remaining always in a languishing condition, with a hypochondriac affection, since that time till October the 9th last, when the Marquis of Puységur was good enough to receive me at the magnetic treatment. I dare to say that from that time to the 22nd of the said month I have not felt much. It was at that very time that I felt the "ambulist" sleep. On the 25th following, I predicted that I should pass an abscess which was attached to the spleen on the 28th at eight o'clock in the evening precisely. And on the 28th on the Marquis asking as to my condition, I replied positively that on the 30th between eight and nine o'clock in the evening I would pass a vomica; that I feared to renew an effort which had already appeared but had definitely passed off; that afterwards there would remain to me another, the last, but that I should spit it up in the form of pus, that the pains of the nerves would remain and would pass away only in course of time. I say and I affirm that all these effects took place as I have indicated.

I confess that on my return home believing that I was quit of my enemies and never thinking there would be any return, I applied myself during five nights and six days to an occupation contrary to my profession. I was obliged to return to the treatment on November 8th last. I confess that since that time up to to-day, the 16th of the same month, at half-past six o'clock, I have not been able to state positively at what time I should pass the deposit which I have now at the pylorus of the stomach. But at present I say that on the seventeenth between nine and ten o'clock at night, I will pass the larger part of it by evacuation, that if I have the good fortune to vomit, perhaps the remainder will go away thus. Nevertheless in default of that I will spit up the pus and little by little I shall be delivered from that fatal enemy. It would be necessary for my good that I should be in the actual position from the time of evacuations till the next day; that I should be touched a great deal on that day, either by a crisis, or others who have the power. It would be also absolutely necessary that I should take on that day the 17th of the month, two ounces or thereabouts of cream of tartar to which might be joined half an ounce of sugar. This should be taken in the morning with some herb broth. Had I been longer in the crisis I should have no need of this.

There will always remain to me weaknesses of the nerves which will be caused by wind (!) but without disadvantage. I shall live more quiet than I have done for four years. My radical cure will take place next spring. I shall be able in the meantime to walk and even to work a little without fear. I state as a fact and say that I look upon my cure as already come about. I repeat and I say that by the sight and sensation I now possess I can distinguish internal maladies as well as external, and thereby judge, pronounce, and immediately obviate, not like these doctors who give prescriptions after they have obtained information, and often very badly by the depositions they have obtained from the patient. The same is not the case in the state in which I am. I can define everything and likewise conclude. . . . It is in consequence of this fact that I have written this in my bed in the magnetic crisis, this day, 16th November, 1784, signed Vielet.

This testimonial is interesting in many ways, not least in its likeness in style to the advertisements of quack medicines and the "testimonies" of Christian Science. The pomposity of the French dominie and his ignorance make an irresistible combination.

We have allowed Puységur and his patients, as far as possible, to speak for themselves. The book from which the quotations are made is apparently a copy printed for private circulation; it is dated December 28th, 1784. The preface is signed in manuscript "Le M.^{s} de Puységur." A supplement, dated February 4th, 1785, bears his name in print. Underneath the signature are *Croyez et voulez*. There are various manuscript corrections and additions to the text of the little book, which rather suggest that they may have been made by the author himself. On this point, however, we have no definite evidence.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1911.*

IF the report for 1911 is somewhat less interesting than some of its predecessors it is none the less a record of work well done by the officials of the Factory Department. Again there is reported a further rise in the number of accidents, a circumstance attributed to the increased volume of manufacture and of industrial activity compared with previous years. The total number of accidents for 1911 was 148,945, compared with 129,550 for 1910 and 124,325 for 1907; the fatal accidents for the same years being respectively 1,182, 1,080, and 1,179. In the textile trades some of the accidents are no doubt due to persons carelessly starting the machinery before assuring themselves that others are clear of danger. There is no evidence to show that insufficient lighting of, or overcrowding in, factories contributed to any appreciable extent to the large number of accidents. An increase in the number of accidents is also reported as having taken place in shipbuilding yards and in docks, and is explained by the greater body of work done in the yards, the larger number of men employed, many of whom were less experienced, and also by the long hours of work. In laundries, too, the number of accidents was larger, probably owing to the long summer of last year, and the pressure of work caused by the festivities connected with the Coronation.

Judging from the space given in the text to the subject, the attention of superintending inspectors of the various divisions had been drawn to the frequency with which blood poisoning follows minor wounds, and to the desirability of factories and workshops being provided with sterilized surgical dressings for wounds. Here is an ample field for insistence upon practical knowledge of ambulance work among factory hands and of an almost unlimited sphere of usefulness for such. Dr. Mackenzie, one of the certifying factory surgeons of the Leeds district, states that since introducing first aid, only one out of 1,000 cases of wounds treated immediately by sterilized dressings and without washing became septic.

It is seldom we hear much of cold storage and ice factories. The occupation is on the whole a healthy one, but in some of the works a larger percentage of the men suffer from rheumatism than in other callings.

Notwithstanding all that has been done to protect women and children from being obliged to carry loads beyond their strength, the number of prosecutions shows that the practice is still followed, and that it is not uncommon to find boys of 14 carrying weights of 60 lb. and more, or wheeling loaded barrows weighing 132 lb. Many of the lads suffer from rupture.

The Principal Lady Inspector in her report dwells upon the relation of dust and tuberculosis, especially in the textile trades. On inquiry into the health of the workers in 9 cotton-waste factories there was found to be an association between the effects of dust and the poor physique of the workers. Dr. Collis found evidence of tuberculous disease in the respiratory passages of females working in lace, and thinks this was probably the indirect result of inhaling finely divided dust shaken out of the lace.

Explosions of dust figure largely in the report, and were due to naked lights firing the dust, to sparking of a magnetic circuit, or the melting of a fuse. From some of the dusty trades sickness among the hands has largely disappeared, owing to improved methods of ventilation, the introduction of exhaust apparatus, and in cement works the use of the rotary kiln. It is an interesting fact that among the cement workers in Great Britain there is nothing like the amount of sickness and acute lung disease which is observed in Germany.

* Wyman and Sons, Fetter Lane, E.C. 1912. Price 2s. 9d.

The number of accidents in electrical generating stations for 1911 was 74 (4 of which were fatal), against 58 for 1910, while the number of electrical accidents in factories other than electrical stations was 290, with 7 deaths, as against 276, with 5 deaths, for 1910. Attention is drawn by the electrical inspector to the means of resuscitating the apparently dead by artificial respiration by Sylvester's method and by the apparatus suggested by Dr. K. A. Fries of Stockholm.

Drs. Legge and Collis deal in detail with the subjects of lead, mercurial, and arsenical poisoning, and with anthrax. An interesting and valuable table is given of the relative frequency of "gassing" of workmen and of the various gases which contributed thereto. Carbon monoxide heads the list—64 casualties with 6 deaths; nitro-benzine 21 with no death; sulphuretted hydrogen 8 cases with 2 deaths. Two of the cases of sulphuretted hydrogen poisoning occurred in the refining of sperm oil during treatment with sodium sulphide.

Each annual report shows that progress is being made in extending the use of leadless paints and in the substitution of wet-rubbing down of painted surfaces for dry sand papering.

Illumination in factories is the subject of a special report by Mr. D. R. Wilson. So far as artificial lighting is concerned, it is maintained that the light should be adequate, the light units being so arranged as to cause no "glare" effects or to produce troublesome shadows. These remarks particularly apply to the artificial lighting of textile factories and the composing rooms in printing works.

Very few changes took place in the staff of the Factory Department during 1911. Miss Patterson, whose long association with the department is well known, and with the high character of whose work we are familiar, retired on her appointment as a National Insurance Commissioner for Scotland. Mr. Shackleton, on taking up a similar appointment for England, vacated his post as Labour Adviser to the Home Office. Through resignation, death, or removal, 129 certifying surgeons' districts became vacant, 12 of which were merged into adjoining districts, the remainder being filled by new appointments.

STATE MEDICAL SERVICE ASSOCIATION.

We are informed that at a meeting held in Liverpool on July 26th it was agreed to form a State Medical Service Association, having for its object the advocacy of a State Medical Service on the following lines:

(*a*) The whole profession to be organized on the lines of other State services now in existence.

(*b*) The entry to the profession to be by one State examination.

(*c*) Each member of the service to be paid an adequate salary, increasing gradually according to length of service and position in the service, and to be entitled to a pension after a specified number of years or in the case of permanent disablement.

(*d*) Members of the public, as far as practicable, to have free choice of doctor, but no doctor to be called upon to have charge of more than a specified number of patients.

(*e*) One of the primary objects of the State service to be to unite preventive and curative medicine.

(*f*) All hospitals to be nationalized and used for the purpose of consultative, operative, and therapeutic work, at the request of and in consultation with the patient's own doctor.

(*g*) The service of the State doctors to be open to every man, woman, or child, rich or poor.

(*h*) The State Medical Service to be administered by a Board of Health under a Minister of Public Health, with Cabinet rank, assisted by expert medical advisers.

The inception of this association was antecedent to the Insurance Act and quite independent of the present difficulties. It is intended that the work of the association shall form a branch of sociological science, and membership is open to all prominent sociologists, both lay and medical.

Any one interested in the matter is invited to communicate with Professor Benjamin Moore, Liverpool, or Mr. Charles A. Parker, F.R.C.S.Ed., 24, Upper Wimpole Street, W.

EXPERIMENTS ON LIVING ANIMALS.

The return showing the number of experiments on living animals during the year 1911 under licences granted under the Act 39 and 40 Vict., c. 77, has just been issued.

England and Wales.

Professor Thane's report contains the names of all "registered places." Six new places were registered for the performance of experiments, and one place was removed from the register during the year. All licensees were restricted to the registered place or places specified on their licences, with the exception of those who were permitted to perform inoculation experiments in places other than a "registered place" with the object of studying outbreaks of disease occurring in remote districts or under circumstances which render it impracticable to perform the experiment in a "registered place." The names of all the persons who held licences during 1911 are given. The total number of licensees was 562. Reports furnished by the licensees show that 135 licensees performed no experiments. The numbers given above include 21 licensees whose licences expired on February 28th, 1911, and of whom 20 returned no experiments in 1911. The number and nature of the experiments returned by each licensee are also stated. The experiments are, as usual, set forth in a table (IV), which is divided into two parts, A and B, for the purpose of separating experiments performed without anaesthetics from experiments in which anaesthetics were used.

Number of Experiments.

The total number of experiments included in Table IV (A) is 5,090. Of these there were performed:

Under licence alone	2,808
Under Certificate C	215
Under Certificate B	1,674
Under Certificate B + EE	393

Table IV (B) is devoted entirely to inoculations, hypodermic injections, and some few other proceedings, performed without anaesthetics. It includes 90,113 experiments, whereof there were performed:

Under Certificate A	89,515
Under Certificate A + E	452
Under Certificate A + F	146

The total nomber of experiments was 95,203, being 528 less than in 1910; there was an increase in the number of experiments included in Table IV (A) of 151, and a decrease of 679 in Table IV (B).

The Use of Anaesthetics.

The larger part of the experiments included in Table IV (A), namely, all performed under licence alone and under Certificate C, 3,023 in number, come under the provision of the Act that the animal must be kept under an anaesthetic during the whole of the experiment, and must, if the pain is likely to continue after the effect of the anaesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anaesthetic.

In the experiments performed under Certificate B, or B linked with EE, 2,067 in number, the initial operations are performed under anaesthetics, from the influence of which the animals are allowed to recover. The operations are required to be performed antiseptically, so that the healing of the wounds shall, as far as possible, take place without pain. If suppuration occurs the animal must be killed. After the healing of the wounds the animals are not neceesarily, or even generally, in pain.

In the event of a subsequent operation being neccessary in an experiment performed under Certificate B, or B linked with EE, a condition is attached to the licence requiring all operative procedures to be carried out under anaesthetics of sufficient power to prevent the animal feeling pain; and no observations or stimulations of a character to cause pain are allowed to be made without the animals being anaesthetized.

In no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anaesthetics.

The experiments included in Table IV (B), 90,113 in number, were all performed without anaesthetics. They were mostly inoculations, but a few were feeding experiments, or the administration of various substances by the

mouth or by inhalation, or the abstraction of blood by puncture or simple venesection. In no instance has a certificate dispensing with the use of anaesthetics been allowed for an experiment involving a serious operation. Inoculations into deep parts, involving a preliminary incision in order to expose the part into which the inoculation is to be made, must be performed under anaesthetics.

Professor Thane goes on to say:

It will be seen that the operative procedures in experiments performed under Certificate A, without anaesthetics, are only such as are attended by no considerable, if appreciable, pain. The certificate is, in fact, not required to cover these proceedings, but to allow of the subsequent course of the experiment. The experiment lasts during the whole time from the administration of the drug or injection until the animal recovers from the effects, if any, or dies, or is killed, a period possibly extending over several days or even weeks. The substance administered may give rise to poisoning or set up a condition of disease either of which may lead to a fatal termination. To administer to an animal such a poison as diphtheria toxin, for example, or to induce such a disease as tuberculosis, although it may not be accompanied by acute suffering, is held to be a proceeding "calculated to give pain," and therefore experiments of the kind referred to come within the scope of the Act 39 and 40 Vict., c. 77. The Act provides that, unless a special certificate be obtained, the animal must be kept under an anaesthetic during the whole of the experiment; and it is to allow the animal to be kept without an anaesthetic during the time required for the development of the results of the administration that Certificate A is given and allowed in these cases.

It must not be assumed that the animal is in pain during the whole of this time. In cases of prolonged action of an injected substance, even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before death. The state of illness may last only a very few hours, and in some cases it is not observed at all.

In a very large number of the experiments included in Table IV (B) the results are negative, and the animals suffer no inconvenience whatever from the inoculation. These experiments are therefore entirely painless.

In the event of pain ensuing as the result of an inoculation, a condition attached to the licence requires that the animal shall be killed under anaesthetics as soon as the main result of the experiment has been attained.

Cancer Investigation Experiments.

During the year 1911, 41,025 experiments were performed by 21 licensees at nine institutions in the course of cancer investigations. Of these, 835 are in Table IV (A) and 40,190 in Table IV (B). The latter were almost entirely inoculations into mice.

Experiments for Government and Public Bodies.

A large number of experiments, almost wholly simple inoculations and similar proceedings contained in Table IV (B) were performed either on behalf of official bodies, with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. Several county councils and municipal corporations have their own laboratories in which bacteriological investigations are carried on, including the necessary tests on living animals; and many others have arrangements by which similar observations are made on their behalf in the laboratories of universities, colleges, and other institutions. A sewage farm is registered as a place in which experiments on living animals may be performed in order that the character of the effluent may be tested by its effects on the health of fish. The Local Government Board and the Board of Agriculture and Fisheries have laboratories which are registered for the performance of experiments having for their object the detection, prevention, and study of diseases of man and animals. In other places experiments have been performed on behalf of the Home Office, the Naval Medical Service, the War Office, the Army Medical Department, the Army Medical Advisory Board, the Army Veterinary Service, the General Post Office, the Local Government Board, the Metropolitan Asylums Board, the Advisory Committee for Plague in India, the Tropical Diseases and Glass-blowers Cataract Committees of the Royal Society.

Seventy-nine licensees report over 21,000 experiments which were performed for Government Departments, County Councils, Municipal Corporations, or other Public Health Authorities; and sixteen licensees performed nearly 13,000 experiments for the preparation and testing of antitoxic serums and vaccines, and for the testing and standardizing of drugs.

Inspections.

During the year the usual inspections of registered places were made by Professor Thane and Sir James Russell. They saw numerous animals under experiment, both of those coming into Table IV (A) and of those coming into Table IV (B). They everywhere found the animals suitably lodged and well cared for and the licensees attentive to the requirements of the Act as well as to the conditions appended to their licences by the Secretary of State.

Irregularities.

The following irregularities occurred during the year:

A licensee who held Certificates B, EE, for experiments on rabbits and dogs, performed similar experiments on cats. He explained that, from the wording of Certificate EE (which is framed in accordance with the requirements of the Act), he thought that he was entitled to experiment on either dogs or cats. The Secretary of State was satisfied that the error was the result of a misconception and allowed the licensee, when he had obtained fresh certificates, to continue the experiments.

A licensee holding Certificate A for inoculations performed experiments in which substances were administered by feeding without that method being indicated in the certificate.

A licensee holding Certificate A for inoculations without an anaesthetic made injections into four animals, for which he should have obtained Certificate B. The injections were not followed by any ill consequence.

A licensee holding Certificates A and B for certain experiments upon birds performed a different experiment upon a rabbit, for which he should have obtained another B. The operation was of a slight character, and no serious injury was done to the animal.

Two licensees holding Certificate A, dispensing with the use of anaesthetics, made injections into animals—in the one case two rabbits and in the other two frogs—which were anaesthetized. According to the Act, the certificate known as B is required in order to allow an animal that has been anaesthetized to recover before the termination of the experiment.

In each of these cases a suitable admonition was addressed to the licensee.

IRELAND.

Sir W. Thornley Stoker reports that in 1911 there were in Ireland 15 registered places; in two of them no person was licensed to perform experiments during the year 1911. Twenty-two licences were in force during the year, of which 20 were in existence at the beginning of the year, and 2 were new licences issued during the year.

Number of Experiments.

The experiments performed were 278 in number; 18 under licence alone and 260 under certificates. Seventeen licensees performed experiments, the number of experiments under each certificate being:

Under Certificate A	...	...	227
Under Certificate C	...	...	33

Animals Used.

The animals experimented on were as follows: Guinea-pigs, 112; rabbits, 76; frogs, 17; mice 12; pigeons, 2; cattle, 2; dogs, 15; fowl, 4; cats, 10; pigs, 28.

Nature of Experiments.

The experiments were of various descriptions, 67 having been physiological, 10 therapeutical, and 201 pathological. The greater number consisted of hypodermic injections and inoculations. The principal were: investigations of the gases of blood and blood pressure; the movements of respiration, functions of heart and nervous control of heart; haemolytic experiments; nervous and chemical control of digestive glands; study of calf vaccine lymph; medico-legal investigations; the intravenous injection of drugs in disease; the study of the tubercle and diphtheria bacillus; investigations of the action of adrenalin, peptine, and ethyl chloride; experiments on preparation of immune serums and testing virulence of typhoid.

Much good work was accomplished in regard to the study of pathology of diseases of the lower animals, including anthrax, poultry disease, glanders, rabies, braxy, swine fever, swine erysipelas, Johne's disease, and the pathological organisms in milk and in food stuffs.

The work done in Ireland under the Act was, in the inspector's opinion, sincere and well intentioned.

New Investigations.

As was the case last year, the increase in the experiments is to be attributed to the study of new investiga-

tions in the matter of treatment of disease by means of antitoxins, serums, and vaccines, and is therefore of high therapeutic and pathological value as tending to the development of a new and most important knowledge of disease and its treatment.

THE HEALTH OF EGYPT.

THE annual report of the Department of Public Health for 1910 has recently been issued. The first part deals with medical administration and the provisions for medical aid

Hospitals.

The total number of in-patients treated during 1910 in the various Government hospitals (excluding the ophthalmic hospitals) amounted to 37,975, as against 36,787 in 1909; the number of days of treatment amounted to 1,030,206, as against 989,089 in 1909. Out-patients numbered 152,733, while in the Government dispensaries 38,449 persons were attended gratuitously. The difficulty of obtaining suitable hospital attendants remains acute, but it is hoped that an extra money grant will be obtained to effect some improvement in this respect in certain of the provincial hospitals; until provision is made for attracting to this service and training a superior class of attendant the standard of nursing must leave something to be desired.

Pharmacies.

Reference is made to the large number of pharmacies conducted by unqualified men, no less than 51.065 per cent. of the total number coming under this category. The struggle against ambulatory poison sellers in the markets remains ineffective owing to the impossibility of taking action against persons of unknown domicile. The importation of opium diminishes, but the cultivation seems to increase.

Medical Practice.

In the report for the preceding year attention was drawn to the defects in the law on the practice of medicine and allied professions. It is admitted on all hands that some control is essential, and, in fact, voluntary societies have been formed to deal with unprofessional conduct by courts of honour. The principal defects in the present law, which dates from June, 1891, are (1) the absence of any provision for revoking the licence to practise; (2) the absence of a clear statement that the diploma entitles the holder to practise in the country of origin; (3) the absence of any provisions making compulsory the communication to a central authority of change of address. The number of authorizations to practise during 1910 was 171.

Medical Education.

During the year 1910 the 52 students who entered in 1906 were due to acquire their diplomas. Of these 6 had left, 1 was dismissed, 3 had gone to complete their studies in Europe, 20 remained in the school (not having acquired their diplomas), while 22 passed the final examination and received their diplomas.

Lunatic Asylum.

The number of inmates showed an increase—1,304 in 1910 as against 1,150 in the previous year, and an excess of 297 over the accommodation actually provided. In addition, 327 persons still insane had been discharged, in many cases on account of lack of room.

Ophthalmic Hospitals.

These hospitals continue to do a vast amount of work. During the year 14,342 patients were treated, these cases being selected from 25,514 applicants. About one-quarter of the patients accepted for treatment were children under 10. Over 11,000 operations were performed.

Infantile Mortality.

The severe infantile mortality of 1909 was not repeated in 1910. The excessive mortality in 1909 was due largely to gastro-enteritis, and its varying incidence was closely connected with climatic conditions. Much also depends on the care and intelligence with which infants are nursed and fed. Reference was made in dealing with the report for 1909 to the good work the Lady Cromer Dispensaries were doing; at the two institutions now open 18,366 new cases and 130,000 attendances were registered. The main feature of these dispensaries is the reception and treatment of mothers and children, and the teaching by example and practice of habits of care and cleanliness.

Infectious Diseases.

The chief items of importance noted in connexion with infectious diseases during 1910 were a marked increase in the incidence of plague, chiefly in Upper Egypt, an increase in the incidence of and mortality from measles, and a varying diminution in other infectious diseases.

The cases of plague in 1910 numbered 1,238, with a death-rate of 49.6, as against 513 cases in 1909 with a death-rate of 40.5. The number of cases of small-pox notified during 1910 showed a decrease of over 650 on that of the previous year; 466,990 vaccinations and revaccinations were successfully performed, but the returns from 754 villages had not been received. Typhus fever showed a diminution of nearly 1,000 cases in comparison with the previous year. Measles, as stated above, raged all over Egypt, 7,435 cases being notified, although this number did not represent the total number of cases occurring, as a great many were not reported.

Malaria and Mosquitos.

The solution of the mosquito question in Cairo lies in the completion of the main drainage scheme, the filling of all fosses, and the raising of low-lying basements and other areas liable to infiltration water. Legal provision for the compulsory levelling is needed, for without it many breeding places for mosquitos will continue to exist. Meanwhile, the usual anti-*Culex* measures are being carried out in the special areas where the inhabitants contribute to the cost. In Suez antimalarial work seems to be carried out in a very thorough manner by a small malaria gang, consisting of an overseer and three workmen, co-operating with the landowners, who, under the Governor, have been formed into an antimalarial association. The landowners are mostly poor men, owning small tracts. By arranging for a just contribution of labour between several small landowners assisted by the official gang, quite a number of useful drains have been cut. All irrigation drains near the towns are cleaned by the Public Works Department. Quinine is distributed by the public health inspector when cases are found in his bi-weekly inspection. The result of these measures is bearing fruit, judging by the statistics. The hospital statistics showed an admission-rate of 39, whereas in 1905, before these measures were adopted, it was 95. There were 62 out-patients in 1910, and 405 in 1904.

The Director-General states "that these statistics show an increasing and real improvement, but I think they indicate a better condition of things than actually exists. The good results are very largely due to the fact that antimalarial drainage measures are in the direction of cultivators' own interests, and may see nothing but good to their lands from the improved drainage."

Sanitary Defence.

Owing to an outbreak of cholera in Russia and in the countries bordering on the Black Sea in 1910, Egypt was exposed to the invasion of this disease on all sides. It was only by a rigid system of inspection and keeping under observation for a limited period persons arriving from infected countries that it was kept under control. The pilgrimage to Mecca began in the end of October, and in December the disease was recognized there. The pilgrim camp at Tor was thoroughly organized, and the medical officers made great efforts to find and observe the pilgrims after their return to Egypt, with the satisfactory result that, according to the returns sent in, every one of the pilgrims notified by Suez to the districts was found.

Water Supply.

The water supply of Cairo has been frequently commented on in the JOURNAL. The convention between the Government and the Cairo Water Company was completed in March, 1910. The arrangement provides for the return to the Nile as the source from which the raw water will be drawn, for sedimentation tanks of liberal extent, for the installation of a mechanical system (Jewell) of filtration, and for reservoirs of ample capacity. It was expected that the installation would be in working order in the early part of the present year

Drainage.

The chief question in relation to the drainage scheme in Cairo of interest to the Public Health Department during the year was that of the surface drainage over an important area of the city. There had been serious difficulties in the satisfactory elaboration of this scheme, and considerable care and ingenuity were required in order to bring it within the minimum limits of general sanitary requirements.

Hygienic Institute and Bacteriological Laboratories.

A large amount of useful work continues to be done in these establishments. The number of examinations in connexion with infectious diseases made in 1910 was 4,075, and of water examinations and analyses over 7,000. The research work done included the investigation of the properties of the serum of the animals used for the preparation of cattle plague serum, the examination of rats from various parts of Egypt, and the enumeration and determination of the fleas carried by them, and the study of a practical method of freeing river water from pathogenic bacteria previous to filtration by means of nascent oxychlorides.

Antiscorpion serum, calf lymph, and antirabic serum are prepared at the laboratory.

Veterinary Department.

During the year 41 cases of rabies were reported as occurring amongst animals. Rabies must now be considered to have permanently established itself in Egypt, and, beyond checking the spread of outbreaks from time to time, nothing more can be hoped for; suppressing it entirely seems almost out of the question with such a large number of wild and semi-wild animals in the country. Poisoning dogs in the neighbourhood of outbreaks and supposed outbreaks has been systematically carried out, but controlling dogs and cats, except in towns, cannot be entertained. In various areas 41,817 dogs were poisoned during the year.

Jewish Method of Slaughtering.

Three races of Jews kill at the abattoir. They are the Karrayeen, the Ashkenas, and the Rabbanyeen. In the Jewish method of cervical bleeding the animal must be secured and thrown down, and the head placed so that it lies upon the horns and nose. The neck is cut by three rapidly executed strokes with a long, exceedingly sharp knife, which must be free from any flaws, and to note this the Khakham tests it with his finger before use, and murmurs: "Let it be blest through me, O God, King of the world, Who strengthenest us in holiness by Thy Command, and Who hast made killing a duty." The animal should, after his throat is cut, move his legs, otherwise its meat is not to be eaten.

The Karrayeen do no inspection in the abattoir. Their qualified butcher only cuts the animal's throat and examines the uterus. If he finds a fœtus of any age in it, the animal is Terepha, that is, unfit for Jewish consumption, and the dealer sells it to the Mohammedan butchers. If the uterus is free, the animal is Kosher, that is, fit for Jewish consumption, and is passed without being labelled or stamped. They eat male and female young gamoos* chiefly, and kill about two animals daily. The whole carcass is fit for their consumption.

The Ashkenas inspect the lungs for attachments to the chest wall, as well as for perforations. If the meat is passed, the Khakham writes on the ribs and over the sternum the word "Kosher." They eat the fore parts of cattle and gamoos up the last rib but one. They kill about three or four animals daily, except on Saturdays.

The Rabbanyeen, who do most of the Jewish killing, inspect meat in the abattoir as follows:

When the abdomen is skinned, the animals are laid on their back, and the belly is opened in the Khakham's presence. Then he takes his knife and incises the diaphragm in two places, making two holes, one to admit his hand for examining the right lung, and the other for the left. Then he puts his hand into each side of the thoracic cavity, and feels along the chest wall and the lung surfaces. Any attachment of the lung to the pleura renders the carcass "unclean." If the lungs are free in the chest, as they should naturally be, and the lung consistency is normal, the carcass is announced as Kosher. When the animal is dressed and hung up, the Khakham reinspects the lungs and kidneys. If the kidneys are cystic, the carcass is Terepha. The lungs are then blown up and should be air-proof, otherwise the meat is "unclean." If cysts are found in the lungs, which are filled with air or pure water, or with dry or even hard material, provided that the hard material is not black in colour, and that the taste of the water is sweet and not sour, and that it does not smell, the meat is Kosher. It is then stamped over the breast and on the forelegs. The stamp states in Israelite language that "the meat is fit for the Jews." Also the hearts, lungs, and livers are marked, and the forearms are labelled with pieces of paper in which the day, date, and year is inscribed, according to the Jewish calendar. The Rabbanyeen pass about forty carcasses daily, except on Saturdays. They only kill cattle and rarely kill gamoos and sheep. They never eat the meat of the Ashkenas or that of the Karrayeen. The Ashkenas allow the meat of the Rabbanyeen to be eaten. The Rabbanyeen are allowed only to eat the fore parts of the animal up to the fourth rib.

* Young buffaloes.

MAINTENANCE OF SANATORIUMS.

ON July 31st a deputation, representing the County Councils Association, had an interview with Mr. Lloyd George and Mr. Burns to ask for generous financial assistance from Parliament in respect of the maintenance of sanatoriums. The deputation suggested that the Treasury should bear a fixed proportion of the annual cost of maintenance, and put that proportion at 75 per cent. Mr. Mark Sykes said that in the East Riding of Yorkshire the county council was prepared to defray the whole cost of building sanatoriums on condition that 75 per cent. of the maintenance expenses was provided by the central authorities. Mr. Lloyd George made a sympathetic verbal reply, and later on the same day addressed a letter to Mr. Hobhouse, a member of the deputation, in which he pointed out that as regards capital expenditure the Government had provided a sum of £1,500,000 to aid the provision of sanatoriums and other institutions, and that in its circular letter of May 14th the Local Government Board announced that, subject to certain limitations, it would provide three-fifths of the outlay on sanatoriums and four-fifths of the outlay on dispensaries out of this fund. Mr. Lloyd George observed that local authorities were prepared to bear 25 per cent. of the annual cost of maintenance if the remainder were provided from other sources, but asked that this amount should be paid to them direct by the Local Government Board and not through the Insurance Committees. The letter continued as follows:

Under the Insurance Act an annual sum of about one million is provided for the treatment of insured persons. While the bill was passing through Parliament provisions were inserted for extending sanatorium benefit to dependents of insured, and in view of this the Government consented to bear one-half of any deficit in regard to sanatorium benefit where local authorities undertook the other half.

It is now urged that schemes for the treatment of tuberculosis should relate to the whole community, and that generally they should be organized and carried out by the councils of counties and county boroughs. This extension involves additional outlay, and in view of this the Government have decided to place at the disposal of the Local Government Boards of the three kingdoms annually a sum of money which will represent approximately half the total estimated cost of treating the non-insured persons as well as the dependents of insured persons. This money will be distributed by the Local Government Boards, in pursuance of regulations to be made by those departments, to local authorities which undertake schemes, to be approved by the departments, for the general treatment of tuberculosis in their areas; and provision will be made accordingly for these grants in the estimates of the three departments.

As regards the cost of treating insured persons, the sum already provided under the Insurance Act, which as I have already stated, is about one million pounds, can only pass to local authorities in pursuance of agreements made between them and Insurance Committees. But I have no doubt that Insurance Committees generally will be anxious to deal with the local authority of their area, and the association may rest assured that the Government will do all in their power to secure this.

I should like to take this opportunity of expressing my great appreciation of the way in which county councils and county borough councils have taken up this important work, and I feel sure that, in view of the additional grants I have herein described, they will proceed without delay to formulate and carry out their schemes.

MOTOR CARS FOR MEDICAL MEN.

BRITISH CARS IN THE GRAND PRIX MOTOR RACE.

WITH motor racing as a sport our readers have small concern, but there is another aspect of races which does affect them. In a great race the cars are driven to their utmost limit, almost to destruction, as is shown by the large number which break down during the trial; and in a race of a thousand miles run at speeds exceeding sixty miles an hour only a car of the soundest construction has a chance of survival. It is therefore with no little satisfaction that we note that for the first time the honours have been secured by British cars. The race for cars of all sizes was won by a big Peugeot, a big Fiat coming second. But in the class of cars of limited size and power three Sunbeam cars secured the first, second, and third places, and the Arrol Johnston the fifth place. This is a record performance, whilst the Calthorpe, Singer, and Vauxhall cars, though less fortunate, did exceedingly well. Indeed, if the average performance of all the British cars together be taken, it will be found to be better than the average of all the foreign cars. It seemed at one time as if the Sunbeams had a good chance of beating even the big Peugeot and the big Fiat, whilst as a matter of fact the leading Sunbeam did actually secure the third place out of all cars. The pace attained involves the engines running at over 2,000 revolutions a minute, and at times fully 3,000; this will give an idea of the strain to which they, as well as other parts of the car, are exposed.

"DRIVING TO THE COMMON DANGER."

It is not very often that we hear of medical men being summoned for offences under the Motor Act, possibly because their cars are usually in their own neighbourhood, and so may be recognized by the police and not stopped. But police prosecutions, which of late appeared to be on the wane, have in some districts undergone recrudescence, and have taken on a yet more undesirable form. In a recent case a car was timed going through a two-mile trap, and a speed of twenty-one miles an hour was alleged. The police, thinking, it may be surmised, that they would hardly secure an effective conviction for so small an infraction of the speed limit, prosecuted the motorist for driving to the common danger, although it was a perfectly open and mostly straight piece of road. This is a more serious offence, and involves endorsement of the licence for the first conviction; moreover, it is a matter of opinion and not of fact. In another case the motorist, the secretary of a motoring organization, had been warned of the existence of the trap and its exact location, he and his companion watching the speedometer all the time in order to keep well within the speed limit. The evidence, which was reported verbatim, was of such a character that one cannot imagine that it would have secured a conviction in any other than a motor case. A speed of twenty-six miles an hour was alleged by police timing at one end only of the trap, or, to be correct, from a side road near one end of the trap. Here, again, the prosecution was for driving to the common danger, and not for exceeding the speed limit. It is well-nigh impossible to offer an effective defence against this form of charge, and it appears that the most careful and oldest driving through a trap of which he is aware is not secure against prosecution and conviction.

THE DE DION 9 AND 12 H.P. CARS.

J. S.—The 9-h.p. de Dion car, if not overloaded by too heavy a body, is quite capable of dealing with any ordinary steep hill. It is a two-cylinder car with 760 by 90 or 750 by 85 tyres, the same rim taking these two sizes. The 12-h.p. de Dion is a four-cylinder car with tyres of the same size as the smaller car. There is a difference of a full hundredweight in the weight of the chassis, and there would probably be a difference of about half a hundredweight in the bodies. The chief difference in running cost would be in the wear of tyres, for increased weight means increased tyre wear. So far as depreciation of the car goes, there would be little difference. The de Dion cars usually sell well second-hand. The Zenith carburetter is now fitted on a standard, and the lubrication is very simple, means being provided for measuring the quantity of oil in the crank chamber, which is adequate for a long day's run when filled to the proper level.

THE FORD CARS.

DR. T. MACCARTHY (Sherborne) writes: It may interest some of your readers to hear of my experience with a four-seated touring model Ford car delivered to me exactly twelve months ago. Miles run, 6,100; total running cost per mile, 1¼d., although I have only got sixteen miles per gallon, and have bought three new tyres lately. But for a lot of running with good loads on the very loose roads of last summer, I think I should still be using the original tyres. The discarded ones were cut and burst, none of them being much more than half worn. Barring a little trouble once with a commutator, which had to be turned on a lathe, I have never had a stop for anything but punctures. I can say nothing about the lasting powers of these cars, but mine is as good as when I bought it.

LITERARY NOTES.

THE universal popularity of tea with all classes of English society is an odd instance of the inexplicable diversity in national tastes and customs. It is only of recent years, for example, that tea drinking has gained any real hold on the affections of the French people; and even now the habit is confined almost exclusively to the fashionable drawing-rooms of Paris. The delights of "le five o'clock" are as yet unknown either to the bourgeois or the peasant, a fact which is hardly surprising when one remembers that tea originally made its début in France as a medicine. M. Marcel Labbé, writing in the June number of *L'Hygiène*, speaks of Pierre Cressé, who, in a thesis read before the Faculty of Medicine in the year 1657, expatiated on the virtues of tea as a remedy for gout, an opinion which was corroborated a few months later by his colleague, Jean de Mauvillain. Gui Patin, it is true, professed the most utter contempt for the new drug, and laughed at Mazarin for using it; but this scepticism was by no means shared by the majority of his educated fellow countrymen. We learn from Madame de Sévigné that the Princesse de Tarente kept herself in health by drinking a dozen cups of tea every day, whilst it was currently reported that the dying Landgrave of Hesse-Cassel had been miraculously restored to life by the truly heroic remedy of forty cups administered each morning. This belief in the efficacy of the morning dose of tea was shared by Racine, at least during the latter years of his life, as well as by Madame de Maintenon's first husband, the poet Scarron; whilst Huet, the well-known Bishop of Avranches, who retained his mental faculties to an advanced age, declared it to be an invaluable preservative of intellectual power. During the eighteenth century tea became quite a fashionable drink amongst the French nobility; but so little was it known—save in the guise of an unattractive aperient—to the general public, that it was not until the great Paris Exhibition of 1900, which brought over crowds of strangers from the other side of the Channel, that the English visitor in Paris was able to obtain without difficulty his afternoon cup of tea. Even now, however, England still prides herself upon the superiority of her tea above that of other European nations, a superiority which is claimed with equal justice by France for her delicious bread. This most important article of diet forms the subject of a short article by M. Francis Marre, which also appears in the June number of *L'Hygiène*. The same issue of this excellent magazine contains an interesting account by M. Louis Barthon of the rescue work carried on at La Pouponnière, the home for deserted mothers and their babies at Porchefontaine; whilst Dr. Maurice de Fleury writes on the manifold dangers of the slum dwellings in Paris, and M. Henri Verne contributes an article on the advantages of special series of stamps as a means of collecting money for charitable purposes.

The *New York Medical Journal* states that the new seventh edition of Dr. S. A. Knopf's international prize essay, *Tuberculosis as a Disease of the Masses, and How to Combat It*, has just been translated into French by Dr. Eugène Grenier, of the Bruchesi Tuberculosis Institute of Montreal. The proceeds of the sale of this book will be for the benefit of the institute. The first translation of a former edition into French appeared some years ago in Paris. Dr. Grenier's new French translation represents the twenty-eighth foreign edition, which with the seven American makes thirty-five editions in twenty-four languages which have appeared within the last ten years. They are the American (7), Arabic, Bohemian, Brazilian, Bulgarian, Canadian, Chinese (2), Dutch, English, Finnish, French, German, Hebrew, Hindu, Hungarian, Icelandic, Italian (2), Japanese, Mexican, Norwegian, Polish, Russian (2), Serbian, Spanish, Swedish, and Turkish. Since the book was written mainly for the education of the laity, this unusually large circulation speaks well for the world-wide interest of the masses in tuberculosis, for whose benefit the Berlin International Tuberculosis Congress offered and awarded the prize.

British Medical Journal.

SATURDAY, AUGUST 10TH, 1912.

THE SECRET OF MESMER.

IN the preface to his book *Mesmerism and Christian Science* the late Mr. Frank Podmore said: "The 11th of August should be observed as a day of humiliation by every learned Society in the civilized world, for on that date in 1784 a Commission, consisting of the most distinguished representatives of Science in the most enlightened capital in Europe, pronounced the rejection of a pregnant scientific discovery—a discovery possibly rivalling in permanent significance all the contributions to the physical sciences made by the two most famous members of the Commission—Lavoisier and Benjamin Franklin." In the BRITISH MEDICAL JOURNAL of January 13th and 20th, 1912, a translation of the full text of this famous report was published; our readers have thus had the opportunity of studying for themselves a document with which, it is clear, some who have written very confidently about it have not taken the trouble to make themselves acquainted. It seems to us that no person of unbiassed mind can read and inwardly digest that report without being convinced of the soundness of its conclusions. It may be remembered that the phenomena observed around Mesmer's tub were after most careful analysis ascribed by the Commissioners to the action of three causes—touch, imitation, and, greatest of all, imagination. How potent an agent is the imagination was freely admitted by Franklin, Lavoisier, and their colleagues. "Doubtless," they said, "the imagination of the patients often has a great influence in the cure of their diseases. The effect of it is only known by a general experience, and has not been determined by positive experiments, but it does not appear that one can doubt about it. It is a well-known adage that faith saves in medicine; this faith is the product of the imagination; then the imagination acts only by mild methods; it is by diffusing calm in all the senses, in re-establishing order in the functions, in stimulating the whole by hope. Hope is the life of man."

What the Commissioners condemned was the goading of the imagination by artificial means to the production of violent convulsions; these "crises," they said, were an evil added to the disease, whatever it might be. They further pointed out that the convulsions were in themselves dangerous, as tending to become habitual, and also to engender similar disorders in others. "These diseases of the nerves, when they are habitual, are the despair of physicians; it is not the function of art to produce them." It is not easy to see why so sane a report should be regarded as humiliating to science, especially as Mr. Podmore himself said that the magnetic fluid was a chimera and Mesmer "was perhaps three parts a charlatan. He had no pretensions to be a thinker; he stole his philosophy ready made from a few belated alchemists; and his entire system of healing was based on a delusion." This is virtually what the French Commissioners said. Why, then, is their report so strongly denounced? Because, we are assured, Mesmer "wrested the privilege of healing from the Churches and gave it to mankind as a universal possession." This precious gift is suggestion—the very thing the Commissioners meant by "imagination." Now, we should be the last to deny the importance of suggestion in the treatment of disease. In that ill-defined force lay the secret of Mesmer. But it was not discovered by him, nor was it given by him to mankind. That the mind, or the spirit, or soul, or whatever we may choose to call the vital principle which "informs" our tenements of clay, exercises a powerful influence on the body is a fact which was put to use in the treatment of disease by the priests of the Asclepieia in ancient Greece and by physicians in every age. Although the motive force itself is obscure and the means of bringing it into play various, the mechanism is simple. Imagination, or "suggestion," sets the will in operation, and it is the restoration of the will power in certain cases of functional disease—so-called "paralysis" of limbs, aphonia, and so forth—that works the cure. Patients in whom movement or other functions have become dormant from disease recover under the influence of a sufficient mental shock; *possunt quia posse videntur*.

But if will power is presented to us as a panacea, we are reminded of the old lady who made her testamentary dispositions on her deathbed, and willed dear John £5,000, dear Mary £10,000, and so forth. When it was delicately pointed out to her that she had not the money, she cheerfully said, "No, but I will it to them." In all but a small corner of the vast and dark territory of disease, the will power, though always useful as a help, has as much effect in the cure, and will be found as empty of solid effect, as the old lady's last will and testament.

Mr. Podmore made a significant admission when he said that "in this study, whether we call it by the name of animal magnetism, hypnotism, or suggestion, the student always finds what he looks for." These words explain not only the belief which has been expressed by many men of great intellectual endowment, but the testimonies of patients, doctors, and others to cures which they imagine they have witnessed. Even in scientific experiments, a great French physiologist was accustomed to impress on his pupils the need of care not to seek for anything lest they should find it.

Elsewhere will be found an account of the work of Mesmer's disciple, the Marquis de Puységur, who at first followed in the footseps of the master, but afterwards dispensed with the ritual of the tub. He strongly condemned "those unhappy convulsions which have done so much to discredit M. Mesmer's discovery," insisting that the magnetic "crisis" was, on the contrary, "a calm and tranquil state which offers to the seeing eye only the picture of happiness and the peaceful work of Nature in the restoration of health." Puységur accidentally discovered for himself the magnetic trance, or, as we should say, hypnotic sleep, which before him was known to Van Helmont, Athanasius Kircher, and others. While in that state his "subjects" were able to tell the nature of their own and other people's diseases, to prescribe the proper treatment, and to foretell the mode of cure. Puységur seems to have been, like honesty according to Autolycus, a very simple gentleman. He accepted the statements of his subjects with an eager credulity that seems to have stimulated their imaginations to fresh efforts. The conditions from which some of them suffered are unknown to pathology, and the mode of deliverance indicated is equally fanciful. As Mesmer's patients were all victims of "obstruc-

tions," those treated by Puységur traced their sufferings to "abscesses" in the brain, the spleen, and other organs, which they foretold would at a time indicated empty themselves through the nose, ear, or intestine, when immediate cure would take place. In one case an abscess of the hand discharged itself through the ear, finding its way along a channel which the sufferer in magnetic vision saw connecting the little finger with the head!

In regard to the mode of cure, it is significant that the *somnambules* spoke of convulsions, spitting of blood, and bleeding from the nose and so forth. Not infrequently the results seem to have been brought about by the aid of ordinary medicines or venesection; from the nature of the evidence it may safely be assumed that they themselves helped to bring about the fulfilment of their predictions. We need not assume that there was always bad faith in this. The curative processes, if we may so call them, were doubtless sometimes the effect of unconscious self-suggestion. Just how much suggestion, how much self-delusion, how much imposture there was in the manifestations of Puységur's *somnambules* it would be difficult to say. The conditions were all in favour of trickery. Puységur was a grand seigneur with a considerable military reputation, and many of his "subjects" were his own dependents. He was a man of enthusiastic temper; honest himself, he was unsuspicious of others. Most important of all, he knew nothing of medicine; he was therefore unable to appreciate evidence either as to the existence of disease or its cure. Small as his book is, it is full of confusion, repetition, and contradiction. His importance in the history of mesmerism is that he disclosed the secret of "animal magnetism," which was, he says, revealed to him by one of his *somnambules*—to the great displeasure, it is said, of Mesmer. It is expressed in the formula. *Croyez et voulez*, which is written at the end of his booklet. In belief and in the operation of the will quickened into active operation by belief lies the secret of all faith healing, ancient and modern.

IN STATU QUO.

MR. LLOYD GEORGE has selected the *Nation* as the medium for issuing yet another appeal to the medical profession to "wait and see." It is printed in a special medical supplement for which the Editor of the *Nation* disclaims responsibility, stating that it is "entirely conducted by medical men." The article ought, perhaps, rather to be called an appeal from the medical profession to the public, for it is not easy to find in it anything that was not either said by Mr. Lloyd George in his speech at Kennington or embodied in the letter which the Insurance Commissioners addressed to the British Medical Association on June 26th.[1]

In his article Mr. Lloyd George insists on two matters in respect of which he is prepared to meet the profession. He says, first, that when the regulations are issued the profession will find that night visits are put in a different category from day attendances, and there will be protection from frivolous calls; and, secondly, that the regulations will amply safeguard the medical profession from being subjected to a kind of disciplinary jurisdiction exercised by a body of laymen in matters which are peculiar to their own profession. This second statement is merely a paraphrase of the first part of Paragraph xii of the letter of June 26th from the Commissioners, in which it was stated that it was intended that questions purely of professional discipline would be referred to a medical tribunal, and that in regard to complaints affecting doctors on a panel involving questions that were not merely professional full opportunity should be given to the local Medical Committee of the area to consider and report upon any decision arrived at affecting technical medical considerations. With regard to the first point, the statement by the Chancellor embodied in the letter from the Commissioners was to the effect (Paragraph xvi) that the Government recognized "that the aggregate amount devoted to medical benefit must be such as to enable suitable payments to be made for certain extras, including night visits, mileage, especially in country districts, and possibly other matters." In discussing the question of remuneration, in his article, Mr. Lloyd George admits that the financial basis on which the rate of medical remuneration was originally computed was erroneous, and in the letter of June 26th he authorized the statement that, "on full consideration of all the information already in their possession, the Government would be willing, assuming the cordial co-operation of the profession in the working of the Act to be assured, to advise Parliament to make extra provision for meeting the cost of medical benefit beyond that originally assumed in the actuaries' calculations." He now contends that the Plender report proves that the original estimate was not so wide of the mark as some have affirmed, but he states that the report of the Committee appointed by the Insurance Commissioners some months ago to inquire into the question of remuneration will deal not only with the Plender report, but also with all other information "from private persons or from organizations which will further assist them in arriving at a just conclusion." He concludes his article in the *Nation* in the following words: "When the report of that Committee reaches the Commissioners they will be in a position to advise the Government as to what addition (if any) it will be reasonable to make for the remuneration of the profession."

If we were to take Mr. Lloyd George's recent utterance quite literally, it would be fair to contend that, so far from adding anything to what was said in the letter of June 26th, he has really subtracted from it; but we have no desire in any way to complicate the position, and prefer rather to rely on the considered expressions contained in the letter. Mr. Lloyd George, in his article, says that it is his sincere determination to use the machinery of the Insurance Act, not merely as a means of mitigating the evils of the present method of contract practice, but for putting an end to them. He is confident that if the machinery "is properly used by the profession, with the help of the great multitude of people who sympathize with their desire to improve the conditions of medical service in the kingdom, the scandals which have been attendant in many cases upon contract practice will soon be registered among the nightmares of the past." This declaration would carry more conviction if the medical reader could forget the constitution of the local Insurance Committees, which, as Mr. Lloyd George points out in an earlier part of his article, are to administer in each district the part of the Act under which provision for medical attendance is to be made. The medical profession has made up its mind in any event to end these scandals and nightmares. If it is forced into that position it will itself establish a general system, sufficiently elastic in its details to be easily adapted to the special

[1] SUPPLEMENT, July 6th, pp. 17 to 20.

needs of various localities, for rendering efficient medical services in return for adequate payments. In so doing it would be certain of a very large measure of public support, including that of the best and most thoughtful section of those engaged in manual labour. By very many members of the medical profession such a solution would be infinitely preferred to any plan involving the intrusion of the State and of State officials between them and the people among whom they live and work.

THE INDIAN ROYAL COMMISSION AND THE I.M.S.

THE Royal Commission on the public service in India recently appointed to examine and report on matters in connexion with the Indian Civil Service and other civil services, imperial and provincial, in India, is instructed to give special attention "(1) to the method of recruitment, and the systems of training and probation; (2) to the conditions of service, salary, leave, and pension; and (3) to such limitations as still exist in the employment of non-Europeans, and the working of the existing system of division of services into imperial and provincial; and generally to consider the requirements of the public service, and to recommend such changes as may seem expedient." The Chairman of the Committee is Lord Islington, better known perhaps as Sir John Dickson Poynder, who is retiring from the Governorship of New Zealand. The members include seven Indian civilians, of whom three are natives of India, with the Earl of Ronaldshay, M.P.; Mr. Ramsay Macdonald, M.P.; Sir Valentine Chirol, director of the foreign department of the *Times;* and Mr. H. A. L. Fisher, Fellow of New College, Oxford, and known as an authority on political and foreign history. The Commission, it is understood, will assemble in India in December, and spend altogether some six months in that country with an interval in the spring in London.

The terms of reference would not, at first sight, appear to include a consideration of the Indian Medical Service, which is primarily a military service, although about two-thirds of its members are employed under the civil Governments. But in his speech on the Indian Budget in the House of Commons Mr. Montagu, Parliamentary Under Secretary to the India Office, made it plain that among the matters to be considered by the Commission would be the position of the Indian Medical Service. He pointed out that, like the Indian Civil Service, it is recruited through an examination held only in this country, and he indicated that the Commissioners would be expected to consider whether the medical training which is possible for Indians to receive in their own country was of such value as to justify opening the door of the Indian Medical Service in India, and whether it would be right to open it to subjects of feudatory States. He also said that the Commission would be expected to report on the question whether the existence of an Indian Medical Service prevented the growth of an independent medical profession. In this connexion the Commission will, no doubt, find occasion to consider Lord Morley's proposals for the establishment of an independent medical profession in India, to which we have frequently referred in the JOURNAL, particularly in an article in our issue of February 24th last.

The nature and extent of the work of the civil branch of the Indian Medical Service must therefore come under the consideration of the Commission, and some recommendations will probably be made. We have always held that an independent medical profession in India must maintain itself on its own merits and by its own efforts, and must not in any sense be a Government service, for then it would cease to be "independent." The Commissioners will no doubt consider how far the right to private practice assured to the members of the Indian Medical Service by the Regulating Act (India, 1773, xiii, George IV, cap. 65, Sec. 25) interferes with the private practitioner in some places, but they will, we believe, find that the interference in most places is small. In any case, it would take a fresh Act of Parliament to cancel the rights of the Indian Medical Service, and it would have to be accompanied by a considerable increase in the pay, as this has always been low relatively to that of other services on account of the actual or supposed additions derived from private practice. There is plenty of room in India for both the Indian Medical Service and for an independent medical profession, which will flourish as the demand of the native population for the western system of medicine increases.

THE DRAFT REGULATIONS.

IT was confidently stated a short time ago that the draft Regulations to be made by the Insurance Commissioners for the administration of medical benefit would be issued early this month. We understand that it is not now probable that this intention will be carried out, and that in fact their publication cannot be expected until September. It would appear that the draft Regulations will be accompanied, or, more probably, followed, by the publication of a report by the Insurance Commissioners on the question of remuneration. This report is being prepared for the Commissioners by a committee which has been instructed to take into consideration Sir William Plender's report and all other communications on the subject submitted by organizations or individuals. It is to be hoped that this report will appear at the same time as the Regulations, as otherwise further unnecessary delay must inevitably be caused, since the two subjects, of the services to be rendered and the remuneration to be received, are interdependent. When the draft Regulations have been issued they will be considered by the State Sickness Insurance Committee, acting on its authority from the Council, but it will be difficult for that Committee to make any effective report to the Divisions unless it has also the opportunity of considering the report on remuneration. It seems probable, therefore, that there will be another long delay, but the period will be utilized by the State Sickness Insurance Committee to revise the scheme for a Public Medical Service in the light of the observations of the Divisions and the various plans which have been outlined by correspondents whose letters and papers have appeared in the JOURNAL.

THE AVERAGE RESULTS OF SANATORIUM TREATMENT.

AT a time when the provision of sanatorium treatment is about to be subsidized by the State, no opportunity should be lost of ascertaining the facts that have been observed as to the real benefits to be anticipated from it. Numerous reports are available from sanatoriums in many lands, but they deal for the most part with immediate, rather than with the ultimate, results that have been obtained. Consumption hospitals and sanatoriums can generally show a very high percentage of so-called success in early cases, but the information obtained by the more searching methods of the Charity Organization Society present the case in a somewhat different light. By persistently following up the after-history of their patients year by year

they are able to show that only about 50 per cent. of them are actually fit for work, and, as the number lost sight of only amounts to about 9 per cent. of the whole, it may safely be concluded that the percentage of practical success is fairly represented by the figure stated. It is well that this fact should be carefully considered both by medical and lay authorities who may in the future have to administer the State-aided sanatoriums. In the report[1] embodying the figures here quoted, the society expresses the opinion that the local sanitary authorities, as at present constituted, are in reality in a far better position to administer the "sanatorium benefit" than are the local Insurance Committees. It stated that the detection and selection of cases for treatment is being well done by the tuberculosis dispensaries, and that the system has proved itself worthy of recognition and employment under the new Act. There can be no doubt that the excellent work done by the Charity Organization Society itself will need to be continued if funds are forthcoming to enable it to be carried on as vigorously as heretofore. The obvious reflection will occur to every one that the wholesale provision of sanatoriums, which can at best only achieve a 50 per cent. success in favourable cases, should not be allowed to displace the existing methods of dealing with early tuberculosis, and that therefore the decision to apply a part of the State grant to the maintenance and extension of the good work that they are doing is a wise one.

THE CARE OF CITY CHILDREN IN GERMANY.

Professor A. Baginsky has published an essay[2] in which he describes and criticizes the efforts made in Germany on behalf of the welfare of children under 14 years of age. He points out the advantage of giving special assistance to those coming from necessitous homes, so as to prepare them to meet the future under better conditions. In Berlin and other large cities public assistance is supplemented by private charity and a vast number of institutions and homes for the relief of sick children, orphans and foundlings are to be found, as well as suitable establishments for the treatment of children suffering from lung trouble and tuberculous disease. In the case of infants under 1 year of age much is gained by collecting the mothers into homes, and there, without separating the nursing child from its parent, instructing them in infant care and hygiene. In addition a system of education and supervision in the individual homes is required. He considers that all girls of 18 should pass through a compulsory training in subjects relative to motherhood, and, comparing this service with that of military service for men, maintains its equal national importance. Between the ages of 3 years and 6 years children begin to show the effects of bad feeding and improper sanitary and hygienic conditions in the home. Though not ill, they exhibit a lowered vitality and physical weakness which renders them liable to contract infectious and other microbic diseases. They have a tendency to develop chronic ailments, such as catarrh, adenoids, and rheumatism with its sequelae. The work done for infants ought to be continued by crèches, kindergartens, and open air playgrounds for the benefit of these older children, so that they may grow strong and develop before commencing the strenuous life of the school. The hours of work and play of the school child are regulated by the State, which also determines the amount of physical culture given, and the standard of education and development at each age. The nutrition, cleanliness, and personal care of the child are left in the hands of the parents. If the child is to be kept in a physical condition which will enable it to reach the higher standards, the community must provide meals for the hungry and clothing and boots for those who require them. The health of children in the schools has been improved by the advent of the school doctor, and by the establishment of outdoor or forest schools and schools for the tuberculous, and Professor Baginsky states that these measures may in future be extended to provide accommodation for the weak and backward, the deaf and dumb, the cripple, and the stammerer. The wants of the children have been recognized by the community, and private endeavour has established numbers of open-air playgrounds, holiday colonies, forest schools, and sea-bathing homes, in the desire to help every class of case. He urges that a central office for the welfare and assistance of children should be established in every large city to bring the work done by the State and by the private individual into connexion, to watch over the interests of the young, and to organize the assistance given in such way that no child between infancy and the age of puberty shall suffer needlessly.

[1] The Sanatorium Treatment of Consumption. A Report of the Charity Organization Society's Work in the Years 1902–11.

[2] *Die Wohlfahrtseinrichtungen für Kinder in grossen Städten.* Von Geh. Med.-Rat. Professor Dr. A. Baginsky. Berlin: August Hirschwald. 1911. (Sup. roy. 8vo, pp. 19. M. 40.)

THE FILM AND THE CRISIS.

The cinematograph, it may be admitted, can be made to provide amusement and instruction, often combined, at a comparatively cheap rate. Through it the young idea, lay as well as medical, can be and is being introduced to many of the mysteries of nature and of science. Nothing is made of showing, in a quite short space of time, how a bud becomes a full-blown rose, or a grub a butterfly, or a coccus a colony of cocci, or a maggot a fly, or of displaying the gambols of the trypanosome amongst the red blood corpuscles. An influence for good in these respects, the cinematograph film exercises others no less beneficial in other directions. Has it not provided a new form of entertainment? Has it not brought us almost into touch with a new set of ideas, and, more important still, a new set of performers? Should we without it have known of the existence of the lady who exhibits the latest Paris coiffures and fashions, or experienced the feeling of joy that comes when, the task of turning herself about completed, she permits her fascinating smile to flicker out upon us? Great and good and important as all these advantages may be, there is yet something to be complained of. There is a fly in the ointment. The film has resuscitated the crisis. It has led to a boom in diseases terminating in this manner. Those of us who were novel readers twenty or thirty years ago knew all about the crisis. In the medical lexicon of the authors of that time there was no such word as lysis. The heroine, the hero, the good old man, and his child with the face of an angel, were predoomed to suffer from some form of fever, affecting particularly the brain, which gradually reached its height, and suddenly ended in complete recovery. After a time this disease seemed to have been stamped out. Now, however, it has appeared again, though it seems to be more common in America and Continental countries than here. At least, the majority of films showing cases bear alien names and marks. In many picture theatres it is possible to behold, almost at any hour, an American physician patiently waiting for the crisis in his one and only patient. He is seated on the edge of the bed with the thumb of his left hand on an ulnar artery of the sufferer, while his right is engaged in signing innumerable telegrams, letters, and documents, calling wandering relatives home, always with his surname and his hard-earned title of "doctor." Doubtless the necessity for compressing a complete story into a film running not longer than twenty minutes induced the producer of picture plays to drag the crisis-ending disease from its hiding place. But it was a bad day for the medical profession. Everybody goes to the "picture show" and few fail to see at least one "picture drama" with a crisis in full working order. This induces the belief that by the exercise of a little skill the family doctor can bring about a sudden and miraculous cure in any case to which he may be called. The doctor who

fails is not up to the standard of the physician of the pictures, and is not, therefore, to be depended upon. The director of a well known cinematograph company has been heard to prophesy that "dramatic" films containing a modicum of common-sense are bound some time to be produced. This is a consummation devoutly to be wished, and if the common-sense pushes out the crisis so much the better.

INTERMITTENT SWELLING OF PAROTID GLANDS.

In spite of several recent studies of cases of periodical swelling of one or both parotid glands, its pathology is still obscure and its treatment is most unsatisfactory. Goebel[1] reports the case of a woman, aged 32, who suddenly acquired a red and very painful swelling in front of and behind the right ear, without apparent cause. The patient, whose temperature was normal, was treated with fomentations and warm oil applied locally. The pain disappeared in a fortnight, and the tumour became somewhat harder and smaller. But from time to time the swelling recurred as a result of chills, and five years after the swelling first appeared on the right side, a small, painless swelling began to appear in front of the left ear. Two years later an abscess the size of a walnut formed at this point and was incised and drained. When last seen the patient exhibited two symmetrical, soft, painless tumours, the size of a third of an egg, occupying the position of the parotid glands. Pressure on the right but not on the left tumour caused an immediate flow of clear saliva. Goebel also reported the case of a workman, aged 40, who developed swellings in front of his ears at the age of 25. Subsequently they reappeared about four times a year, and lasted on each occasion from three to fourteen days. Although the openings of Stensen's ducts were patent, pressure on the tumours caused no secretion of saliva. Remouchamp has reported the case of a man, aged 85, who had suffered attacks of chronic inflammation of the salivary glands, attended by pain, since he was 26 years old. The skin was normal over the tumours, which felt like a cluster of closely packed grapes, and yielded on pressure a flow of alkaline saliva, rich in mucin and ptyalin. It also contained pus cells, large nucleated leucocytes, fragments of leucocytes, streptococci, and short Gram-staining rods. A blood count revealed a marked degree of leucocytosis. The patient's father had suffered from the same complaint. In a somewhat similar condition described by Kussmaul the parotid glands swell periodically, becoming suddenly painful and distended. With the escape of fibrinous plugs from the ducts there is a free flow of saliva. Lange[2] relates the case of a Swede, aged 35, who had at the age of 20 undergone treatment for nasal obstruction, headache, and attacks of sneezing. Shortly after contracting syphilis, for which he was treated for between two and three years, he began to suffer from periodical swelling of the parotid glands. The attacks became more frequent, and sometimes followed coughing. The submaxillary and sublingual glands became involved subsequently, and mastication was then difficult and painful. The attacks, which recurred twice a week or oftener, disappeared as quickly as they came, and lasted at first for a quarter of an hour only. Later each attack used to last for several hours. Although the parotid glands were but slightly swollen, they were very painful, even on light pressure. The caruncula sublingualis was very prominent and painful, and Stensen's ducts were patent, saliva being seen to escape readily from them when the tongue was depressed. Potassium iodide was prescribed, as the above condition had developed within a year of the infection with syphilis. But neither this drug nor its combination with quinine had any influence on the swellings, which also were unaffected by arsenic, mercurial inunction, and massage. The publication of this case drew from Lüders[3] an interesting account of two similar cases. One of his patients, a merchant, 29 years old, had also contracted syphilis, for which biannual courses of mercurial inunction had been prescribed. A cold which he caught at this time was followed by the development of acute otitis media on the left side. This was followed by perforation of the tympanum, and a profuse discharge of red-stained pus. The left parotid gland was somewhat indurated and swollen, but while it was only slightly painful, the tragus and mastoid process were exquisitely tender. As periodical swelling of the parotid had been observed before the occurrence of the middle-ear disease, the former was not attributed to the latter, but to the syphilis, which had been acquired about a year before the parotid swelling began. This view was, however, dismissed when treatment with mercury and potassium iodide was found to be useless. In the second case, an officer, aged 47, whose denial of infection with syphilis was supported by a negative Wassermann reaction, developed slight inflammation of the right parotid gland when he caught a severe chill as an ensign. Subsequently, this condition recurred from time to time as a result of chills which, however slight, had of late years been sufficient to provoke an attack. Owing to the sense of tension caused by the firm and somewhat painful gland, the patient experienced considerable discomfort, especially when the head was turned to the right. He learnt to massage the swelling several times a day with Bengué's balsam, which caused profuse salivation, and completely reduced the swelling within a day, and sometimes within a few hours. The left parotid gland, which had shown similar but slighter periodical swelling for the past ten years, was treated in the same manner. Doubtless, syphilis may involve the parotid glands, but the above cases were probably due to catarrh of the mucous membrane lining the ducts of the glands. The treatment of such a condition by drugs offers little prospect of success, whereas massage may be effective, if there is obstruction to the flow of saliva either by stenosis or kinking of the salivary ducts. Catheterization of these ducts is a difficult and painful process, against the use of which Lüders is very emphatic. Any attempt to treat the condition by the removal of part or whole of the gland is also to be deprecated, as the risk of wounding the facial nerve outweighs any advantages to be gained from such an operation.

[1] *Berl. klin. Woch.*, September 6th, 1910.
[2] *Deut. med. Woch.*, February 8th, 1912.

NEW OPERATIONS FOR GLAUCOMA.

Glaucoma was regarded as an incurable disease until von Graefe introduced and perfected the operation of iridectomy; this operation has proved of inestimable value in acute glaucoma, but its action in cases of chronic glaucoma has been on the whole disappointing. In many cases, far from effecting a cure, iridectomy has been followed by rapid deterioration of sight. In long-standing examples of chronic glaucoma simplex the iris is very atrophic, and in these cases iridectomy is worse than useless. The exact way in which iridectomy brings about a favourable result is even now not quite clear. In some cases the iridic angle is occluded and the iris root is closely applied to the corneal periphery; it is reasonable to suppose that in such a condition a peripheral iridectomy, by clearing out the iridic angle, may reopen channels of outlet from the eye. But in many glaucomatous eyes the iridic angle gapes widely, and yet iridectomy may be successful. In these cases there is probably, as Thomson Henderson of Nottingham has pointed out, an obstruction in the pectinate ligament, or, as he prefers to call it, the cribriform ligament, caused by sclerosis of its component fibres. Henderson has also shown that the cut iris, being constantly bathed in isotonic lymph, lacks the necessary stimulus towards healing, and consequently

[3] Ibid., March 21st, 1912.

does not cicatrize. The result of this paradox is that the cut surface acts as a wick, and new channels of outflow are opened up by the iridectomy. If, however, the iris be atrophic, this mechanism does not come into full play and the operation is a failure. For some years ophthalmologists have been so fully conscious of the failure and dangers of iridectomy in glaucoma simplex that they have devised new procedures, many of which may be said to be still on trial. One of the first of these methods, dating back to the early days of iridectomy, is de Wecker's sclerotomy. This operation is still recommended, especially in Germany, where at first it met with great opposition. In a really dangerous case, where intra-ocular haemorrhage is feared and yet something must be done, it is still probably the safest procedure, but the effect produced is often very transient. To obtain a permanent lowering of tension it is necessary in cases where iridectomy is likely to fail to obtain a filtering cicatrix. This can be achieved with certainty by leaving a tag of iris in the wound, but this method may cause general septic infection of the eye or a state of chronic irritation, and therefore cannot be recommended. The safer plan is to perform one of the modern operations. In Lieutenant-Colonel Herbert's first method a wedge-shaped strip of sclera was isolated with a narrow Graefe knife and left *in situ*. The second operation, the small-flap operation, is easier, but probably not so efficient as the wedge method, and many surgeons who have given it a full trial are abandoning it because they find that after a time the wound ceases to filter and heals permanently. The Lagrange operation is difficult and hazardous, but yields good results. The trephining operation seems to be at present the most favourite method of obtaining a filtering cicatrix. Both it and Holth's punch method attain the same object, a piece is completely removed, and the conjunctiva replaced over the hole. By this means permanent drainage between the anterior chamber and the subconjunctival tissues is maintained. Another operation which has been introduced to cure glaucoma is Heine's cyclo-dialysis, which seeks to open up a communication between the anterior chamber and the lymph spaces outside the choroid and ciliary body. Thus the ophthalmologist of to-day has a considerable choice of method, and is no longer confined to iridectomy. But, unfortunately, even though the rise of tension be permanently cured, the essential glaucomatous atrophy of the nerve in many cases slowly progresses till a condition of total amaurosis results.

THE TESTING OF MEDICINAL CHEMICALS FOR ARSENIC.

A SUPPLEMENTARY report of the Committee of Reference in Pharmacy to the Pharmacopoeia Committee of the General Medical Council, which has just been published, is entirely devoted to the testing of chemical substances used in medicine for arsenic. The experience of recent years has shown that a very large number of substances may contain traces of this element, the contamination being most commonly derived from sulphuric acid used directly or indirectly at some stage of the production of the chemical. It is not sufficient that the pharmacopoeial requirements should include the absence of arsenic, if only comparatively rough tests for its detection are ordered; none of the tests at present official is well suited for detecting such small quantities of arsenic as are liable to occur; these traces, however, are by no means negligible therapeutically when they exist in substances which may be taken regularly over considerable periods of time. It is therefore necessary to prescribe a test capable of detecting and approximately measuring very minute amounts of arsenic, and to lay down maximum limits for the amount of this substance which shall be permitted in the various chemicals used in medicine. The number of substances for which such limits are proposed in the present report is 109; for the large majority of these the suggested limit is either 2 or 5 parts per million; for liquor magnesii carbonatis it is as little as 0.2 part per million, for ferrum redactum it is 200, for antimonium tartaratum 500, and for other antimony compounds 1,000 parts per million. The test which is adopted is a modification of that of Siebold, and has long been in use for the purpose; it consists in making a solution from the substance under examination in such a way that it contains whatever arsenic may be present, and adding this to zinc and hydrochloric acid in a vessel of prescribed size and form. The evolved gas is purified by passing over lead paper, and is then passed through a cap of paper impregnated with mercuric chloride; a yellow stain on the paper indicates arsenic, and the depth of the stain is approximately proportional to the amount of arsenic present. Directions are given for preparing a "standard stain," representing one-hundredth of a milligram of arsenious oxide (As_2O_3); in testing any chemical a definite stated quantity is employed, and it is required that this quantity shall not give a deeper stain than the standard. The general method is the same as that recommended some years ago in a report to the General Medical Council by Dunstan and Robinson; it has been put into its present form by Mr. C. A. Hill, B.Sc., F.I.C., on behalf of the Committee of Reference in Pharmacy. It appears to meet the requirements of the case fairly well, inasmuch as only very simple apparatus is necessary, and the process itself—although of course requiring careful work—presents no difficulty which would put it out of the reach of any ordinary pharmacist.

SECOND AND THIRD CLASS MUMMIES.

DRS. M. A. RUFFER AND A. RIETTI have communicated to the Archaeological Society of Alexandria the highly curious results of an examination of two mummies, attributed by Professor Flinders Petrie to the period of the Persian occupation of Egypt (525 to 323 B.C.). We see in this country notices in undertakers' shops indicating that a funeral may be of the first, second, or third class, according to the price. Something of the same sort of discrimination seems to have existed in Egypt, at least at the date indicated. Of the first class, for kings and queens and great men and women, every one has heard and seen a good deal. The first of the mummies now described seems to be an example of a second class embalming. The viscera appear to have been extracted in a very summary way, and the body pickled until the flesh shrank to the bones; the external surface and the internal cavities were then treated with hot gum, the excess being allowed to escape from the interior of the body through a hole in the perineum, afterwards plugged with rags; the limbs, as they were bandaged were made up into a semblance of the human form by packing with more rags. In the mummy examined there would seem to have been disease of the dorsal vertebrae, the nature of which could not be ascertained; the dorsal vertebrae appear to have crumbled during this summary process of embalming, and the embalmer in order to retain the form of the body replaced them by a stick resting just below and behind Poupart's ligament on the right side and on the first rib above. This mummy was of an adult, perhaps aged, for the wisdom teeth were present and many others had been lost during life. The second mummy was evidently an example of third class embalming. It consisted of the skull and a long crate made of the ribs of palm leaf containing the bones of the trunk and limbs thrown casually together, but more or less in place; the bones of the lower limbs were together in the lower part of the crate, but one femur was upside down and on the wrong side, the right shoulder was formed by one iliac bone, the front of the chest by the other, and one scapula was placed upside down to form the left shoulder. The authors believe that this body was first buried in soft moist earth until all the soft parts had

disappeared, and that the bones were then gathered together and roughly placed in the crate, some care, however, being taken to arrange the bones so that in outward shape when bandaged *secundum artem* the whole resembled a human mummy. They consider that it was an example of a cheap mode of preparing bodies for burial resorted to by those who could not or would not afford an expensive form of embalming.

RESTRICTED NASAL RESPIRATION.

FOR the last five years a series of observations have been made by Dr. E. Kuhn, a staff surgeon in the German army, as to the therapeutic uses of a special form of oro-nasal inhaler, described as a "lung-suction mask."[1] It consists of an ordinary inhaler, covering mouth and nose, but so contrived that the inspiratory flow of air through the nose can be hindered to any desired extent, while the expiratory flow through the mouth is not interfered with. It is claimed for this type of inhaler that rapidity of oxygen intake can be graduated, and that the consequent slowing of the pulmonary circulation and engorgement of the lungs with impure arterial blood must have a beneficial effect in checking the development of tubercle. Over and above this, it may afford relief in catarrhal and bronchitic conditions, and serve to improve the shape of ill-developed or malformed chests. The successful cases recorded and the names of those who advocate this form of treatment command our respect, but it would appear that success depends upon the perseverance with which the inspiratory instructions are carried out. The muscular effort required to overcome the artificial resistance in the inhaler must result in deeper inspiration, and hence in a better filling of the pulmonary air passages. At the same time, the increased inspiratory movements must tend, if continued for long periods, towards greater expansion and development of the chest walls. Whether it is actually necessary to obstruct nasal inspiration in order to bring about these desirable results does not at first sight appear obvious. The use of an oral inhaler or respirator has always been regarded as a simple means of inducing nasal inhalation, especially in cases where some natural obstruction exists, but artificial obstruction of the nasal intake has not as yet found a place among recognized methods of treatment. We are informed that in cases of asthma and spasmodic breathing the method has proved of great service, while the persistent use of the mask has been known to convert a narrow chest into a full one, rendering the subject capable of undertaking military service. Contraindications are mainly the presence of a weak heart or of acute pleurisy. The one is not likely to be benefited by obstructed pulmonary circulation, while the deep inspirations are more than likely to be painful in the other. It is asserted that the rapidity of the lymph flow is expedited by the use of the mask, and that it may therefore be commended in cases in which lymph stasis is present or suspected. Respiratory gymnastics are always irksome after the first novelty of their use has worn off, and they often fail to achieve their full results, owing to want of perseverance. The wearing of an apparatus such as the one described has been found to command unlimited faith on the part of the user, and that, after all, is the main object of many of the more complicated means of relief.

THE SURGERY OF THE LUNG.

THOSE who are interested in the subject of what surgery of to-day can do for the various affections of the lungs should read the very able papers which Professors A. Fraenkel and W. Körte communicated to the Berlin Medical Society.[2] Fraenkel considers the indications for surgical interference and the chances of success, while Körte deals with the operations and their results. It is impossible to give even a brief survey of these combined papers in a short article without leaving out much which is of importance, for throughout the twenty-six pages which they cover there is scarcely a superfluous line. Fraenkel attributes the chief advances to the marked improvements in the technique of pneumotomy and in the development of compression treatment of the lung. Both authors pay tribute to the value of the Roentgen rays in facilitating diagnosis, and Körte especially shows how useful at times the employment of Sauerbruck's and Brauer's negative and positive pressure chambers or apparatus may be for the purpose of preventing the collapse of the lung when the pleural cavity is opened. Heroic measures, such as the removal of a whole lung for cancer by Kümmel, have not been attended with success; his patient died six days after the operation, and metastases were found *post mortem* in many situations. Lenhartz opened a large cavity in the upper lobe of the lung and removed layer after layer of carcinomatous tissue, completing the treatment with *x*-ray applications. The patient was alive and well one and a half years after the operation. The details in regard to the treatement of abscess of the lung and gangrene show that what used to be regarded as hopeless conditions now under favourable conditions yield to the surgeon's skill. More complicated and yet equally important are the advances achieved in the treatment of bronchiectasis, while the details of the methods adopted in dealing with wounds of the lung show that a proper selection of cases for operation, together with rational operative or conservative treatment, lead to a saving of life. Lastly, brief mention should be made of the treatment of tuberculosis of the lung, both by artificial pneumothorax and by extensive resection of the ribs.

THE POLITICAL ADVISER TO THE CHINESE PRESIDENT.

DR. GEORGE ERNEST MORRISON, who has been appointed Political Adviser to the President of the Chinese Republic, first became generally known to the European public when he published in 1895 his book, *An Australian in China*. In its subtitle it was described as "a narrative of a quiet journey across China to Burma," and that it was quiet or, indeed, that it was accomplished safely and without any serious delays, marked the author as a traveller of extraordinary energy and unfailing resource, while the way in which the story was told proved him a man of singular modesty. Before this, however, he had become well known in Australia by a journey on foot, before he was 21, across that continent from the Gulf of Carpentaria to Melbourne, a distance of over 2,000 miles. He is a son of the late Dr. George Morrison, of Geelong, Victoria, and had already been an undergraduate of Melbourne University, when in 1883 his adventurous career was checked by a spear wound in New Guinea; the spear head was cut out by Professor John Chiene in Edinburgh in the following year, and in 1887 Morrison graduated M.B., C.M., there. Afterwards he visited the United States, the West Indies, Spain, Morocco, and the Far East. He acted as special correspondent of the *Times* in 1896, when he travelled from Bangkok in Siam to Yunnan city in China and round Tonquin. In 1897 he crossed Manchuria from Stretensk in Siberia to Vladivostok, and in that year settled in Peking as the *Times* correspondent there. In that capacity he has exercised a great influence on European opinion, owing entirely to the accuracy of his information, the breadth of his views, and the prescience of his forecasts. Reuter reports that his appointment to his new office is most popular among all classes of the Chinese, who realize the advantage of securing the services of an officer combining the ability of a statesman with a knowledge of Chinese affairs surpassing that of all foreigners.

[1] *Die Lungensaugmaske* (Physical Treatment of Lung Diseases, Poverty of Blood, Whooping-Cough, Asthma, Circulatory Disturbances, and Sleeplessness). By Staff Surgeon Dr. E. Kuhn. Berlin: Julius Springer. 1911. (Sup. roy. 8vo, pp. 35: 24 Abbs. M. 1.)

[2] *Berl. klin. Woch.*, Nos. 6, 7, and 8, 1912.

THE UNIVERSITY OF WESTERN AUSTRALIA.

SIR NEWTON MOORE, the Agent-General for Western Australia, announces that the Senate of the new University of Western Australia is about to appoint eight professors. The State has, by a special Act of Parliament, provided for an annual minimum expenditure of £13,500 to meet the cost of administration and the general needs of the university. Private munificence is also coming to the assistance of the new institution. Sir Winthrop Hackett, LL.D., who was chairman of the Royal Commission on the establishment of a State university in Western Australia and is now Chancellor of that university, has already fully endowed a Chair of Agriculture, and it is hoped that this example will be followed by others. As organizer of the university the Senate has selected Mr. Hugh Gunn, who carried out successfully a similar work in South Africa, and who is now in the State actively engaged in preparing the ground for the inauguration of the new institution early next year. Perth, the capital of Western Australia, already possesses a Technical College (hitherto affiliated with the University of Adelaide), an astronomical observatory, and a museum and art gallery.

MINERS' NYSTAGMUS.

As the outcome of a discussion on miners' nystagmus (neurosis) held on July 19th during the Oxford Ophthalmological Congress, the following resolution was unanimously passed: "That, in the opinion of the Congress, the character of the illumination is the chief factor in the production of miners' nystagmus, and that a Departmental Committee should be appointed to make inquiries into and to report upon the exact conditions under which the disease occurs."

THE Standing Committee of the House of Commons, which, as stated last week, is considering the Government Mental Deficiency Bill, had intended to meet on Tuesday, August 6th, but, owing to difficulty in ensuring a quorum, the next meeting has been postponed until October. The number of amendments of which notice has been given is large.

Medical Notes in Parliament.

NATIONAL INSURANCE ACT.

Sanatorium Benefit.

IN reply to a question by Mr. Astor, Mr. Burns said that the Local Government Board had already issued an order prescribing the manner of domiciliary treatment of insured persons suffering from tuberculosis of which they approved for the purpose of Section 16 (1) (*b*) of the National Insurance Act.

In reply to a further question by Mr. Astor, Mr. Burns said that the Local Government Board had now approved for a period of six months of thirty sanatoriums and other residential institutions, containing 1,172 beds. There were available at this moment four local authorities with special sanatorium accommodation for upwards of 70 beds; 57 local authorities contracted for patients in 200 beds; 93 infectious hospitals with provision for 970 beds; 14 dispensaries run by local authorities; 50 voluntary dispensaries, and a number of other dispensaries and shelters for patients if they applied.

Mr. Astor asked (1) whether it was proposed that the beds available for the purposes of sanatorium benefit in fever and other hospitals should be reserved chiefly for advanced cases of tuberculosis; (2) how many medical men in charge of small-pox, fever, and other hospitals approved by the Local Government Board for the purposes of sanatorium benefit, where it was proposed to treat early cases of consumption, had held appointments or been trained in special institutions for the treatment of tuberculosis; (3) how many of the medical men holding senior appointments in small-pox, fever, and other hospitals, approved for the purposes of sanatorium benefit, came up to the special standard laid down by the Local Government Board (May 14th and July 6th). Mr. Burns said that he was advised that the beds available at isolation hospitals would, in many instances, be used not only for advanced cases, but also for cases requiring short periods of training and treatment and for cases under observation. As regards the medical men who were now in charge of existing institutions, he could not say what were their exact special qualifications, but they all possessed general knowledge of the methods of treatment of tuberculosis, and the Board had only given provisional approval for a period of six months to these institutions.

Sanatoriums in Ireland.

Sir John Lonsdale asked the Chief Secretary under which section of the National Insurance Act a grant for the erection of sanatoriums had been made to the Women's National Health Association; and if he would give the reference to any section of the Act which empowered the Local Government Board to deal with private persons or associations in regard to the erection or provision of sanatoriums, or which prescribed regulations or conditions under which money might be paid to such persons. Mr. Birrell, in answer, referred to Section 64 (1) of the National Insurance Act, 1911. Save as regards the consent of the Treasury, no conditions were attached to the exercise of the discretion of the Local Government Board in distributing the grant in aid of sanatoriums under that section.

In reply to Mr. Devlin, Mr. Masterman said that under Section 64 of the Insurance Act the grant was to be distributed by the Local Government Board for Ireland with the consent of the Treasury, and the Treasury before giving such consent was required to consult with the Insurance Commissioners. The matter was under consideration by the three Departments concerned, and the procedure proposed to be followed would be announced at an early date. He was not in a position to state how many schemes had already been prepared by local authorities and submitted to the Local Government Board.

In reply to Mr. William Redmond, who asked a question as to the position under the National Insurance Act, of the sanatorium established by voluntary effort in County Clare, Mr. Masterman said that if the sanatorium referred to was approved by the Local Government Board for Ireland, it would be competent for Insurance Committees to make arrangements with the managers of the sanatorium for the treatment therein of insured persons suffering from tuberculosis, for which Insurance Committees would make payment. The Local Government Board for Ireland was primarily responsible for the distribution of the capital grant available under Section 16 of the Finance Act, 1911, and Section 64 (1) of the National Insurance Act.

Sanatorium Fund.

Mr. Cassel asked the Chanceller of the Exchequer where an insured person had in the course of the year been resident in the area of three or more Insurance Committees, which committee would be paid 1s. 3d. in respect of such person. Mr. Masterman announced that under Section 61 (1) of the Act all sums available for sanatorium benefit in a county or county borough in any year were to be paid or credited to the Insurance Committee at the commencement of the year, and under this provision it would be necessary to credit the whole 1s. 3d. in the case of each insured person to the Insurance Committee of the area in which he resided at the commencement of the year. The financial adjustments necessary in the case of persons moving from one area to another in the course of the year were still under consideration.

Sick Benefit.

In reply to Lord Robert Cecil, Mr. Masterman said that he was obtaining returns from approved societies and their branches and approved sections as to the number of their members. It was necessary, however, to circularize about 20,000 societies and branches for this purpose, and it was impracticable at present to render complete returns.

Medical Benefits.

Mr. Godfrey Locker-Lampson asked whether the Government had taken into account the provision of a capitation fee for the medical profession in respect of all persons over 70 who had been insured, and all persons in receipt of

disablement allowance who were no longer contributing, and those persons between 50 and 70 who had ceased to contribute, but were not yet 50 per cent. in arrear with their contributions; and whether the actuaries' estimates provided for 6s. a head for doctor and drug expenses in regard to all these cases. Mr. Masterman said that the answer to all these questions was in the affirmative in respect of all persons entering into the National Health Insurance Scheme at ages under 65. The actuaries had been consulted on this point on the information he had.

Hospital Nurses (Ireland).

Mr. John O'Connor asked the Chief Secretary whether he was aware that nuns employed as nurses in workhouse hospitals in Ireland received only about £30 per annum each, out of which they had to clothe and support themselves, and that, in time of illness, they had their own communities to fall back on for medical and other attendance; and whether, under the circumstances, they would be allowed to claim an exemption from contribution under the National Insurance Act. Mr. Masterman stated that if, as would appear from the facts as stated in the question, the nurses were under a contract of service with the workhouse authorities, they must be insured. The Commissioners had no power to allow exemption to any persons unless they were persons qualified for exemption under the terms of Section 2 of the Act.

Sanitary Service of India.—Viscount Midleton asked the Secretary of State for India whether he could make any statement as to the reform in the sanitary service of India which had recently been under consideration; what would be the position of the head of the sanitary service under the new conditions; and when he would be in a position to lay papers on the subject. The Marquess of Crewe said the Government hoped very soon to lay full papers on this subject. The Sanitary Commissioner would be relieved of a great part of his work and would be the independent head of a separate department. The research work, which was under the control of the Sanitary Commissioner, would be placed under the direct authority of the Medical Director-General. On purely technical sanitary matters the Sanitary Commissioner would be not a subordinate but an independent officer, and on questions of administration he would be in the position of chief of staff to the Director-General. It was not possible to divorce the medical service from the sanitary service in India. The local Governments must have a considerable degree of independence in sanitary matters, because they found practically all the money for the work, and because in India associations existed between sanitation and politics to an extent not found elsewhere. It was possible by unwise insistence upon sanitary improvements to run counter to the deep-seated beliefs and prejudices of the population in many parts of India, and in such matters it might be presumed that the local Governments were the best guides. A scheme had been agreed upon with the object of strengthening the local sanitary staff. Nine Deputy Commissioners would be appointed, and for those posts Indians would be eligible. It was hoped that in due course each of the more considerable towns in India would have a health department, presided over by a competent officer, which would place those towns on something like the same level as the great urban communities in this country. It had been arranged that the Government of India would come forward with money pro rata to the sums provided for the purpose locally. The papers to be submitted to Parliament would deal also with the conference held at Bombay concerning malaria and the destruction of mosquitos.

Vivisectional Experiments.—Mr. Chancellor asked whether the irregularities by six licensees referred to in the return of experiments on living animals for 1912 were reported by them or were discovered by the inspectors through witnessing the 291 experiments which they saw personally; and whether, in the case of the 94,912 experiments which the inspectors did not see, the Home Office depended entirely on the reports of the licensees themselves, or possessed or used any machinery to discover or check irregularities in case licensees declined to incriminate themselves by reporting them. Mr. McKenna said there were no irregularities in the 291 experiments in which the inspectors witnessed the operations. In one case the irregularity was detected by the inspector seeing the animals (cats) after they had been operated on. In the other cases the irregularities were detected from the reports made or papers written by the licensees. The check upon irregularities, especially any of a serious nature, was afforded by a large number of animals—many thousands—under experiments which were seen by the inspector on his visits after the operation or inoculation.

Lunatics (England and Wales).—Mr. Armitage asked the Home Secretary the total number of lunatics in England and Wales and the proportion they bore to the total population on January 1st in each of the following years: 1851, 1861, 1871, 1881, 1891, 1901, 1911, and 1912. Mr. McKenna answered that the information was given in the following table:

Table showing, for England and Wales, the Total Number of Lunatics, Idiots, and Persons of Unsound Mind on January 1st in each Year, with their Ratio (per 10,000) to the Population.

Year.	Population (at the Time of the Census).	Total Number of Lunatics, etc. (on January 1st).	Ratio (per 10,000) to Population.
1851	17,927,609	16,456	9.18
1861	20,066,224	39,647	19.76
1871	22,712,266	56,755	24.99
1881	25,974,439	73,113	28.15
1891	29,002,525	86,795	29.92
1901	32,527,843	107,944	33.19
1911	36,075,269	133,157	36.91
1912	36,545,076*	135,661	37.12

* Estimated for the middle of the year.

Forcible Feeding.—The Commons spent their Bank Holiday in discussing the Appropriation Bill and the Finance Bill. On the third reading of the former measure Mr. Lansbury found an opportunity for once again raising the question of forcible feeding. He asked the Home Secretary to appoint a committee to consider whether the forcible feeding of suffragist prisoners could not be abolished. The Home Secretary replied at some length, and said that he was glad to inform the House that no one was being forcibly fed at the present time. It was not correct to quote him as having said that in no case was forcible feeding dangerous, and he had frequently advised the exercise of the prerogative for the release of prisoners to whom forcible feeding would be dangerous. Whenever the prison authorities were advised that any serious permanent injury to health would be caused by forcible feeding the practice was discontinued. If forcible feeding were abandoned and prisoners were informed that in no circumstances would they be forcibly fed, every prisoner had only got to announce the intention not to take food to obtain immediate release. He was not able to draw a distinction between suffragist and other prisoners.

Vaccination at Ordnance Factories.—In reply to Mr. Charles Duncan the Secretary of State for War said that vaccination was still insisted on for men who obtained employment in the ordnance factories, subject to the discretion of the medical officer. A man who was disabled in consequence of vaccination did not receive sick pay if he underwent the vaccination as a condition of being taken on. Owing to a misunderstanding of an earlier ruling, it was found in 1908 that a practice of giving pay to men vaccinated on entry was growing up, and the ruling against it was therefore made clear. It was not considered that men who underwent vaccination in order to qualify themselves for employment should do so at the expense of the public. He was considering whether any relaxation of the rule as regards sick pay was possible.

Certificates of Successful Vaccination.—In reply to Mr. Ramsay Macdonald, the President of the Local Government Board stated that the total number of certificates of successful vaccination received by vaccination officers during 1910 was 531,567. The proportion of such certificates to the births registered during the year 1910 was 59.3 per cent. The corresponding figures for 1911 were 491,260 and 55.7 per cent.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND DISTRICT.

Medical Reports in Compensation Cases.

At the Manchester County Court last week, before Judge Mellor, a question arose as to the charges made at the Manchester Royal Infirmary for medical reports in cases under the Workmen's Compensation Act. The case was one in which a collier asked for an order against his employers for alleged arrears of compensation payments. The man was an out-patient at the infirmary, and asked the surgeon for a report as to his condition, and was told that he could have a written report on paying the usual fee of a guinea. Mr. Hinchcliffe, the solicitor who appeared for the claimant, said the workman and his relatives were too poor to pay such a fee for a report. Sir William Cobbett, who acted as solicitor for the employers, happens to be the chairman of the Board of Management of the infirmary, and he said that most of the surgeons of the infirmary did their work there gratis, and the Board of Management could not expect them to give written reports for the purposes of evidence. In reply to a question by the judge as to whether the fees for reports went to the doctors themselves or to the infirmary, Mr. Hinchcliffe said the fees were pocket money for the doctors. Sir William Cobbett said that was a flippant observation, as the board had no right to ask the surgeons to write out these reports, even though the house-surgeon was a paid officer. The judge suggested that if the doctors put a prohibitive fee on such reports it might be impossible for poor people to get reports. Sir William Cobbett said the Board of Management had considered the question over and over again. Ordinary certificates were given, but anything more than that in the nature of a report the medical men would strongly object to, and the board would have to deal with the doctors as a body, and, he added, "they are no unimportant body to deal with, for if you trench upon their privileges they resent it bitterly." The judge acknowledged that the doctors did a great deal of work for nothing, but thought that this was a question affecting the administration of justice. Sir William Cobbett said the doctors at the infirmary were not bound to assist in the administration of justice, except in their capacity as citizens. A medical report was a statement of the evidence that the doctor was prepared to give in court, and no one had any right to ask for that except on the doctor's own terms. Ultimately the judge suggested that poor people in the circumstances of the present applicant could not be expected to pay a guinea for the report they might need, and he thought that reports such as were required might be given for 2s. or 2s. 6d.

It may be convenient here to mention the recent decisions of the Annual Representative Meeting at Liverpool on this matter, which has been under consideration for over a year, and was sent down to all the Divisions so that the Representatives might be instructed on it. Thus the decisions of the Representative Body were only arrived at after the fullest consideration and in strict accordance with constitutional procedure. The Representative Body decided:

1. That the furnishing of certificates in cases of injury to workmen is no part of the duty of members of the honorary or paid medical staffs of voluntary hospitals.
2. That a certificate of attendance of a workman at hospital, containing no information as to the nature of the case, should not be regarded as a medical certificate.
3. That any medical certificate expressing an opinion as to the fitness or unfitness of a patient to follow his employment, or any report on such cases, under the Workmen's Compensation Act, given by any member of the staff of a voluntary hospital whether honorary or paid, should be paid for, and the fee should be received by the medical practitioner who signs the certificate. The minimum fee for a certificate should be 2s. 6d.
4. That in the case of all medical reports under the Workmen's Compensation Act given by the members of the staffs of voluntary hospitals, whether honorary or paid, the fee should not be less than £1 1s.
5. That in the case of all initial examinations, with report, under the Workmen's Compensation Act, given by a practitioner not as a member of the staff of any voluntary hospital, the fee should be not less than 10s. 6d.

It was also decided that the same principles should apply to all cases coming under the Employers' Liability Act or the common law. It is important to note that all certificates or reports which are required by employers must, by special provision of the Workmen's Compensation Act, be paid for by the employers, not by the workmen. The Solicitor of the British Medical Association advises that when a workman presents himself for examination and report for compensation purposes, he should be required to bring a written request from the employer as a guarantee that the examination is at the employer's request, and is not for any other private purpose of the workman. This written request establishes the liability of the employer, and without it the workman should be told that he himself will be held liable to the doctor for payment of the fee.

Infant Mortality in Salford.

Some remarkable figures are given in the annual report of Dr. Tattersall, Medical Officer of Health for Salford, as to the apparent influence of breast feeding on the infant mortality-rate. During the year 1911 the infant mortality reached the high figure of 154 per 1,000 births. This is a large increase on the previous year, when the death-rate was only 131, and is over the average of the preceding five years, which was 145 per 1,000 births. The sole cause of the increase was diarrhœa, which accounted for 257 deaths, and the long-continued dry and hot summer is assigned as the cause of the epidemic, which lasted for ten weeks—from the middle of July to the end of September. The health visitors made efforts to keep the mothers informed as to the special care to be taken with respect to the feeding of their infants during the diarrhœa season, and of the infants born in the year 1910 they carefully watched 4,017 until they were a year old, noting specially how they were fed. The following table shows the death-rates per 1,000 births, classified according to the way in which the infants were fed.

	Births.	Deaths.	Death-rate.
Breast and other food from birth ...	316	51	161.4
Breast 1 month, other food 5 months	102	23	225.5
Breast 2 months, other food 4 months	61	15	245.9
Breast 3 months, other food 3 months	57	9	157.9
Breast 4 months, other food 2 months	51	11	215.7
Breast 5 months, other food 1 month	26	5	192.3
Breast alone	3,060	244	79.7
Other food entirely	296	114	385.1
Child died under one day...	—	48	—
Totals	4,017	520	129.9

It will be seen from the above table that among infants fed entirely from the breast the death-rate was only about one-fifth of the rate for infants fed entirely on other food. Under the German Insurance Consolidation Act, 1911, maternity benefit to the amount of the usual sickness pay, that is half the wages, is payable for eight weeks, of which six at least must be after confinement, and nursing money to the amount of half the sickness pay may be given for twelve weeks after confinement provided that breast-feeding is continued for that period.

BIRMINGHAM AND DISTRICT.

The Treatment of Puerperal Fever.

The Governors of the Birmingham and Midland Women's Hospital are undertaking an important scheme of extension in order to meet the City Council's need for a puerperal fever ward and for the better treatment of septic cases. No general hospital likes such cases, but the authorities of the Women's Hospital have decided to assume the responsibility and to make suitable provision for them. The building scheme provides for the erection of a ward and for additions to the nursing home. There will be 25 more beds, and 14 of these will be appropriated to Birmingham

cases of puerperal fever. In return for this consideration the City Council will pay to the hospital £72 a bed per annum—a total of £1,008. That amount is equal to about three-fifths of the actual cost to the hospital. The other 11 beds will be for general septic cases. The operating room has already been erected. The total cost of the new work will probably be about £4,000, and to meet this the governors will make a special public appeal in the autumn.

PHYSICALLY DEFECTIVE PERSONS.

A special subcommittee of the Birmingham Education Committee appointed to inquire into the needs and condition of the cripples of Birmingham has reported that in order to deal properly with the problem involved two steps must be taken—first, suitable arrangements for the support, relief, training, and employment of cripples; second, increased efforts for the development of a healthy environment and mode of life in all parts of the city, coupled with further endeavours to check the spread of tuberculosis. The committee gathered information as to the means and extent of the special industrial training given in other countries. In Germany it was found that there are seventy-seven organizations assisting cripples from various points, and seventy-five different means of earning a livelihood are taught in the various homes. These include for boys, in addition to the usual shoemaking, tailoring, brushmaking, etc., gardening and agriculture, watchmaking, jewellery and filigree work, shorthand, and wood carving. Girls are taught embroidery, lacemaking, sewing and darning, Roentgen-ray work, and photography. In Denmark and Norway, as well as in the United States, much the same class of work was taught to cripples. Summarizing these reports, the committee state that the facts which stand out emphasize the necessity for (1) careful and suitable industrial training; (2) labour exchanges for the physically handicapped, to popularize the knowledge of the possibilities of employment for the various types of handicraft, and to collect the necessary information as to suitable openings for individual cases; (3) a central house or workshop, where the collective trades could be followed which cannot be carried on in the home; for example, printing, book-binding, etc. (4) More systematic co-operation and definite co-ordination between the local education authority and the hospitals and medical charities. The committee also suggests the establishment of workshops for cripples.

The committee found that tuberculosis was a more frequent cause of crippling than accident; it accounted for 24.9 per cent. of the cripples in Birmingham, as compared with 16.1 per cent. due to accidents.

Reference is made to what is called post-sanatorium treatment. Night hospitals and work colonies are recommended. In the night hospitals patients would sleep under conditions similar to those in sanatoriums. Such structures need not be costly, and would not necessarily be permanent; open building sites, accessible to trams, might be utilized, free passes being given by the Corporation to patients night and morning. The "work colony" would require careful elaboration. There should be arrangements for work to be done under healthy conditions by those ex-sanatorium patients who would otherwise be obliged to return to work of a pernicious kind or in unsuitable surroundings.

LONDON.

LONDON COUNTY COUNCIL.

Appointments to School Medical Work.

WE are informed that two errors occurred in the list of medical appointments to the Public Health Department of the London County Council issued to the press last week, and published in the BRITISH MEDICAL JOURNAL of August 3rd, p. 276. In the list of appointments for one year at salaries of £400 a year—the third of the three paragraphs in small type—the name of Mr. Creswell Burrows should appear in place of that of Mr. Reginald Green, and the name of Mr. L. R. Tosswill should be added.

SOUTH WALES AND MONMOUTHSHIRE.

SWANSEA HOSPITAL.

THE ninety-fifth annual general meeting of this hospital was held at Swansea on July 19th. The annual report and financial statement were received and adopted. The in-patients during the past year numbered 1,967 and the out-patients 9,745, both figures showing an increase on any previous returns. The average cost per occupied bed, allowing for out-patients, was £74 9s. 6d. It is gratifying to note that, in spite of the great strikes which paralysed the district earlier in this year, the income has amounted to £10,613, the subscriptions of employées being actually £20 more than in the previous year. The expenditure exceeded the income by £751. Among the donations are sums of £4,000 from Mr. Roger Beck towards the endowment fund and £1,500 from Mr. Glyn Vivian. The building fund's position is not so satisfactory, there being a deficit of £5,221. The new wards and casualty departments are well on the way to completion and the new dispensary is in use. Extensive alterations are in progress in the basement, the kitchens are being remodelled; and a commodious *x*-ray department is being prepared. It is at present proposed to utilize a large part of the basement for the latter purpose, rooms for treatment and surgical purposes being provided for the radiographer. The convalescent home accounts show a deficiency of £300, which is much to be regretted, seeing that such institutions materially reduce the cost per patient in the hospital, as well as hastening recovery.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

INSURANCE COMMISSIONERS AND LOCAL MEDICAL COMMITTEES.

CONSIDERABLE dissatisfaction is felt in various parts of Ireland at the recent action of the Insurance Commissioners. Some time ago they invited the Conjoint Committee to nominate four doctors for each county from which the Commissioners would select two medical men to act on the local Insurance Committees, but in several instances the Insurance Commissioners have selected medical men whose names were not among those submitted to them. At a meeting of the South Tipperary doctors on July 25th correspondence was read between the Insurance Commissioners and Dr. Power, showing that this had been done, and as a result the doctors who had been appointed immediately intimated their intention of forwarding their resignations to the Commissioners. The meeting expressed its high appreciation of this action. The Secretary of the Irish Medical Association has also written to the Irish Insurance Commissioners requesting information why two doctors in Enniscorthy and Bray, whose names were not put forward by the Conjoint Committee, have been selected.

CORK SANATORIUM AND INSURANCE FUND GRANT.

At a special meeting of the Cork Sanatorium Committee held on July 20th, Mr. Creagh, a member of the Conjoint Board, brought under the notice of the Board the fact that £145,000 was being distributed throughout Ireland, according to the population, for the purpose of providing sanatoriums and dispensary treatment for tuberculosis under the Insurance Act. Out of this sum they were now taking £25,000 for the Women's National Health Association, and as the population of Cork was one-eleventh of all Ireland, Cork was losing as a result £2,272. The Countess of Aberdeen and the National Health Association had started the building of a sanatorium at Red Mount in Meath, and she had asked the various other counties in Ireland to send patients there under the auspices of the Women's National Health Association. If Her Excellency had got Meath, Westmeath, and other counties that were going in with her to hand over their portions of the grant to finance the institution in County Meath, they in Cork would not say a word against it, but they objected to a portion of their grant in Cork being taken for County Meath. Accordingly the following resolution was passed unanimously:

That we, the members of the Cork City and County Sanatorium, which represents all the various urban and rural

district councils of the Cork Corporation, protest in the strongest manner possible against any portion of the funds provided by the Finance Act that are coming to Cork City and County out of £145,000 for the purpose of providing sanatorium and dispensary treatment within the county being paid over to finance the Women's National Health Association, and that we ask the County Council and Corporation of Cork to resist to the utmost the grant of £25,000 proposed to be handed over to the Women's National Health Association.

Women's National Health Association and Dispensary Grant.

Throughout the country protests are being made against the proposed grant to the Women's National Health Association for treatment of tuberculosis patients. Ireland as a whole was to get in round numbers under the Finance Act, 1911, the sum of £145,000 for the purpose of erecting sanatoriums and other institutions for the treatment of tuberculosis, and this sum was to be divided among the various counties on the basis of population. But before the people of Ireland were given an opportunity of expressing their views on the matter, the large sum of £25,000 was earmarked for the Women's National Health Association. The ostensible object of this grant was to enable this association to come to the aid of those counties which, for one reason or another, preferred to hand over their money grants and privileges under the Act to the association. It would appear that in addition to this £25,000 this body will receive from certain counties (as Kerry, Westmeath, etc.) the latter's share for building sanatoriums, so that it is impossible to estimate the entire amount of public money which will finally reach the association. The counties which have already erected sanatoriums at the expense of the ratepayers object to the reduction of their grants caused by the earmarking of this £25,000, especially as there is a further £20,000 earmarked as a stand-by in the event of an "epidemic." It appears that the Kerry County Council have decided to take 40 beds in the Peamount Sanatorium, though there is a sanatorium in the adjoining county of Cork, erected three years ago, in which, on the average, there are 20 vacant beds. If the two counties had amalgamated, a large part of the expense of the Kerry wing at Peamount (£70 a bed) might have been saved, in addition to the expense of conveying the patients some 200 miles from Kerry to Dublin.

Tuberculosis Dispensaries.

At the last weekly meeting of the Rathdown Board of Guardians a letter was read from the Wicklow County Council stating that it proposed to use the Bray Dispensary as a tuberculosis dispensary under the provisions of the National Insurance Act, and asking the permission of the board of guardians. The following resolution was passed, protesting against such action:

> That this board of guardians having had under consideration the letter from the County Council of Wicklow, dated 17th inst., with which was enclosed a printed copy of the scheme adopted by that body in connexion with the sanatorium provisions of the National Insurance Act, 1911, and in which it is proposed to employ the existing dispensary at Bray as a tuberculosis dispensary, hereby declines to consent to this proposal, and strongly protests against any attempt being made to use Bray Dispensary in the manner proposed, or any other dispensary under the jurisdiction of this board.

Irish Census Returns.

The census returns for Cork, Monaghan, Armagh, Tyrone, and Donegal have now been issued. In Cork city the population has increased by 551, while in the county the population has decreased by 13,058. Males are in excess of females by about 3,000. In 1901, 1 in 30 of the population was relieved by the Poor Law; the number has now fallen to 1 in 41. In the last ten years over 43,500 people have migrated, and in the last sixty years 545,085—that is, one and a half times the present population. In Monaghan and Armagh the population has fallen by over 3,000 and 5,000 respectively. In the former the proportion of the population relieved by the Poor Law has fallen from 1 in 84 to 1 in 107; and in the latter from 1 in 71 to 1 in 93. The number of emigrants in the last ten years was respectively 4,333 and 8,408. In Tyrone the fall in the population is nearly 8,000, or 5.25 per cent. The number of one-roomed tenements in the county was 1,348; in 180 cases there were 5, 6, or 7 occupants, and there were 42 cases in which the occupants exceeded 7, including 5 cases of 10 persons, 2 cases of 11, and 2 of 12 or more persons in the one room. The number obtaining Poor Law relief has fallen in the last ten years from 1 in 82 to 1 in 107 of the population; 5.3 per cent. of the population were returned as able to speak Irish. In Donegal the population has fallen by over 5,000, equal to a loss of 2.88 per cent. There were 2,735 tenements of one room, of which 529 contained 5, 6, or 7 occupants, and in 142 cases the occupants exceeded 7 in number. The number of those in receipt of Poor Law relief has fallen from 1 in every 138 to 1 in every 170 of the population. The number of persons able to speak the Irish language was 59,313, or 35.2 of the total population; of these, 4,733 could speak "Irish only," and 54,580 could speak Irish and English. In both Tyrone and Donegal males were in excess of females by 800 and 700 respectively.

Charge against a Bonesetter.

A farmer and district councillor was returned for trial last week in the South of Ireland on a charge of causing the death of another farmer, who died on July 17th. From the evidence given at the magisterial inquiry it appeared that the deceased fell from his cart and sustained an injury to his right leg. He was examined by the accused, who stated that the leg was badly broken, and asked for calico, Burgundy pitch, and splints. With these he proceeded to set and dress the leg. The man's condition became worse, and a fortnight later, at the direction of a local nurse, a doctor was called in, who found the patient suffering from blood poisoning, and ordered his removal to the local infirmary, where his leg was amputated on the following day. Two doctors expressed the opinion that tight bandaging, by stopping the circulation, would have caused the condition in which the man's leg was found; and one of them stated that the leg had not been broken. Witnesses stated that the accused was regarded as a skilled bonesetter, and had set bones without fee or reward.

Vaccination Defaulters in County Wexford.

The Enniscorthy Board of Guardians, at its last meeting, refused to take action in connexion with 399 vaccination defaulters, reported by Dr. Delaney in the Clonroche Dispensary District, and unanimously adopted a resolution calling on all the boards of the county to abolish vaccination in their various unions.

Registrar-General's Report.

The Registrar-General's annual report for Ireland for 1911, laid on the table of the House of Commons recently, contains some interesting details concerning cancer and tuberculosis.

Tuberculosis.

The general trend of the Registrar-General's remarks concerning tuberculosis is exceedingly encouraging, although it has to be recognized, unfortunately, that tuberculosis is still at the head of twenty-two principal causes of death in Ireland, and that cancer stands sixth. Since 1904, when the recorded death-rate from tuberculosis was 2.9 per 1,000 of the population, the rate has fallen to 2.2 per 1,000 last year, when there were 9,623 deaths, compared with 10,016 in 1910. There has been a reduction in the yearly number of deaths of 3,071 between 1904 and last year, which represents a percentage of 24. The report expresses the opinion that the decline in the mortality-rate from this disease cannot be dissociated from the foundation of the Women's National Health Association in 1907, whose work and scope is thus summarized:

1. There are about 150 branches, with about 19,000 members, in Ireland.
2. Two garden playgrounds for children have been constructed in the most congested districts of Dublin, out of derelict spaces, and a third is in course of preparation.
3. The establishment of the Collier Memorial Dispensary for the prevention of tuberculosis, which centralizes the work previously carried on by the Dublin Hospital Tuberculosis Committee.
4. The formation of the Dublin Samaritan Committee in connexion with the dispensary, also of several such committees in connexion with different branches.
5. The carrying on of the Allan A. Ryan Home Hospital for tuberculosis patients in the second stage of the disease.
6. The establishment of the preventorium at Sutton.
7. The establishment of the pasteurized milk depôt.
8. The establishment of numerous babies' clubs in Dublin and throughout the country.

Cancer.

Dealing with the question of cancer, the report says that the total number of deaths classified under this title was 3,582 as compared with 3,664 in the previous year. Of these, 1,260 were attributed to carcinoma, 169 to sarcoma, and the remaining 2,153 to cancer or malignant disease undefined. The rate represented by the total was 0.82 per 1,000. With slight variations there has been a fairly steady rise in the rate of cancer mortality since 1901, when it was 0.651 per 1,000. A curious point brought out in the marriage statistics is that the marriages of Roman Catholics represent a rate of 5.17 per 1,000 of the Roman Catholic population, whereas other marriages are equivalent to a rate of 5.91 per 1,000 of the rest of the population. As usual the proportion of illegitimate to legitimate births is very small, being only 2.8 per cent. The death-rate was equivalent to 16.6 per 1,000 of the population, varying in the provinces as follows: 14.0 in Connaught, 15.5 in Munster, 16.8 in Ulster, and 18.5 in Leinster. The highest rate occurred in Dublin County Borough—24.1; and the lowest in Belfast County Borough—namely, 17.0.

CANCER RESEARCH.

Mr. Arthur Compton, B.A., M.B., a chemistry student of Queen's College, Galway, has been appointed a member of the staff of the Imperial Cancer Research Fund in London. For his success in the synthesis of complex acridine bases, he was awarded a Science Research Scholarship by the Royal Commissioners for the Exhibition of 1851, which he held for two years at the Pasteur Institute in Paris. Since then he has been attached to the institute as a research assistant up to the present time, and in collaboration with Professor Bertrand has communicated a series of papers on enzymes to the French Academy of Sciences and to other scientific societies in Paris.

FOOT AND MOUTH DISEASE AND THE MILK SUPPLY.

Though no new cases of the disease have been reported during the week, the effects of this outbreak may still be serious, as any prolonged drought at the present time would mean a considerable decline in the milk supply of Dublin. This is due to the fact that the milking stock, which gave a supply during the spring and early summer, are now running dry, and while the damp weather produced grass enough to keep them in milk during the early weeks in July, the change of weather which has occurred is likely seriously to interfere with this state of affairs, and owing to the cattle embargo consequent on the outbreak of foot and mouth disease there is no opportunity at present for dairy owners, in the absence of markets, to purchase springers or milch cows to keep up the normal stock of milk which would meet the demands of their regular customers. Last year, during the King's visit, the prolonged drought forced up the price of milk from 1½d. to 2d. per pint, though there was every facility then to buy milch cows. Then fodder was scarce, and the milk supply was not sufficient to meet the demand. Now, however, unless the embargo on cattle is immediately removed, there is no alternative before them, since dairy owners cannot replenish their stock of milking cows, or secure feeding for them under normal conditions, except to increase the price of milk, and if there is no change in the situation, it is difficult to tell how the people will obtain milk, or at what figure the price will stop.

ST. JOHN AMBULANCE ASSOCIATION.

The presentation of medals in connexion with the Dublin Centre of the St. John Ambulance Association took place recently at Lord Iveagh's gardens, St. Stephen's Green, Dublin. The medals were granted by the King in recognition of the services rendered during the Royal visit last year. The duties of the ambulance corps were very arduous owing to the hot weather, as altogether 337 cases were dealt with. Mr. Justice Ross presented medals to the following units of the brigade: St. James's Gate Division, 53 officers and men; Messrs. Jacob's Division, 17 officers and men; City of Dublin Division, 12 officers and men; City of Dublin Nursing Division, the Lady Superintendent and 5 nurses. The annual competition for Lord Iveagh's challenge cup is to be held on August 17th at Lord Iveagh's grounds.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

DERELICT HOUSES IN EDINBURGH.

A PROBLEM of an unusual character is at present confronting the municipal authorities of Edinburgh. In various parts of the city there are empty houses uninhabited and uninhabitable, having been closed by order of the city authorities as unfit for human habitation. When a house is closed by order of the authorities, two alternatives are open to the owners—they may put them in habitable condition and get the closing order annulled, or they may leave the houses tenantless, in which case they quickly become derelict. Over a dozen cases of the latter class are being considered by a subcommittee of the Public Health Committee. Under the Corporation Act of 1901 the Edinburgh Town Council has powers, failing agreement with the owners, to take possession of the uninhabited properties. An interval of three months from the date of the closing order is allowed, but if within that period the property has not been made habitable, the town council may step in, may use the property for various purposes; it may rebuild the houses for letting, or may use the site for baths and washhouses or some other public purpose, or may clear the site and make an open space of it. Compensation must be paid the proprietors under the terms of the Housing of the Working Classes Acts. There are various scales of compensation according to the circumstances of the case. For property in the lowest category the payment only includes the value of the site and the value, if any, of the stone and lime. These powers have not hitherto been utilized.

Another city problem is that of the cleaning of common stairs in tenements of houses, particularly in old properties and densely populated districts. At a recent meeting of the town council it was suggested that the town council might engage a staff to clean the stairs and passages, especially where there were a large number of tenants on one stair. The present custom is for arrangements to be made amongst the tenants to undertake the cleaning in turn, with the result that it is more or less neglected. A remit has been made to the medical officer of health, the sanitary inspector, and the inspector of cleansing to consider the subject and report.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

PERSONALITY IN MEDICAL WORK IN INDIA.

A CORRESPONDENT of a Lahore newspaper has a thoughtful letter on this subject. He writes that letters from Bannu tell of the people of the place spontaneously closing their shops and suspending their business on two days in one week in respectful memory of the two medical missionaries who had laid down their lives, in fulfilment of their duty, in Bannu.

We read, too, of hundreds, some say thousands, of the rough frontiersmen crowding round and into the missionary compound to ask about their friends, and after Dr. Pennell's death petitioning to be allowed a last look at the body of their friend; and as one reads it and knows that many another Englishman lays down his life in this country doing his duty, one wonders that one does not oftener read of such heartfelt expressions of sorrow. One remembers, too, how on the occasion of Dr. Forman's death in Lahore, the inhabitants of the city requested that his body should, on its way to the grave, be carried through the city streets that they might show their sorrow. There are, one believes, many young Englishmen whose characters and work would win this respect if they were given a fair chance, and one remembers, too, that it is on such influence as this that our empire depends. Does the Government give the factor of personal influence a fair chance of playing its part and accomplishing the tremendous work that it can do?

What would have been the careers of Messrs. Barnett and Pennell if, instead of being medical missionaries, they had belonged to the Indian Medical Service? To begin with the younger man. He had spent four years in the country and had spent them all at Bannu. What is the course of a young man in the Indian Medical Service in his first four years? One young Indian Medical Service man of my acquaintance has been connected with six different regiments in four different places in his first two years. Another had six changes in ten

months. The first of these two in his first appointment was rapidly gaining the affections of the men of his regiment, but frequent changes naturally damp a man's personal likings for his fellow men, and by the end of his two years the young Indian Medical Service man has ceased to take an interest in the men, *as* men. He takes an interest in them as cases, but he himself becomes a part of the administrative machine of the Government and the personal factor is almost obliterated. At the end of his two years the young Indian Medical Service doctor will probably hold an acting appointment or two, with the result that at the end of four years he will have been in some ten or twelve different stations. Then he will begin to hold appointments for longer periods. Probably by the end of twenty years he will have held some four substantive appointments, and in holding them and various acting appointments, he will have passed his time in about a dozen more spheres of work. Result, that at the end of his twenty years he will have been in twenty different appointments, but will be a piece of machinery only doing his work well as such, but rarely exercising personal influence or making personal friendships amongst the people of the land.

These facts might well prove food for thought to those responsible for the endless changes which occur in official medical work in India.

Jamaica.

Report on Typhoid Fever.

A recent number of the Jamaica *Gazette* contains a report of the committee appointed by the Governor to investigate and report on the conditions productive of typhoid fever in the city of Kingston and its suburbs. The report is the work of Drs. MacDonald and Turton, with appendices by Dr. Scott, Government Pathologist; Dr. Ker, S.M.O., Jamaica; Dr. Grabham, and Dr. Castle. Dr. MacDonald's report goes into the matter very fully. He deals with all the different factors which in any way may have influenced the spread of the epidemic; these facts he summarizes in the following remarks:

> The endemic existence of typhoid in the community is shown over the previous ten years; and while epidemic is not evidenced, there is an increase of endemic incidence dating from 1907, after the earthquake of that year. There has always been a high case mortality, and the incidence of disease has been in excess in women usually occupying a yard room alone, or accompanied by another woman nominally single, and engaged in washing, sewing, or domestic service. Few cases have occurred amongst people of better class, and in most of these cases a suspected source of infection was found amongst the domestic servants, although rarely has this suspicion been absolutely proven. June and November showed in 1911 the most cases, and during the previous ten years these months give the highest percentage of cases. The sanitary condition of premises and the sanitary convenience in most cases have been unsatisfactory, but probably in no greater proportion than in the whole city. The habits of the people and their general appearance are suggestive of easy means of spread of typhoid. Bread among the various food supplies has excited suspicion as a vehicle of infection. Dust is general, and flies and other insect pests have been relatively uncommon. The personal factor in the large majority of cases has been strongly suspected as the means of infection, though the actual proof is rare.

In addition to dealing with the insanitary condition of houses and yards and the habits of the people, Dr. MacDonald considers the food supply, dust, flies, vermin, and the water supply. He states that his investigation of the evidence did not afford many instances in which it seemed probable that the ordinary house-fly or other insect pests acted as carriers of endemic typhoid. It has not been observed that the common pit closet serves as a breeding place for the house-fly; stable manure and soft damp earth, especially if the dampness be due to manurial deposit, form the usual breeding grounds, but domestic refuse of any sort, if damp, affords a home for the larvae.

The mortality-rate in the epidemic under review was high, the case-rate being 42.10 per cent., but this was the death-rate of known cases, and abundant evidence suggested the existence of much typhoid in the community which was never recognized as such. The preventive measures adopted and the departmental routine carried out by the medical and sanitary authorities seem to be thorough. Leaflets of instructions are distributed to all typhoid patients leaving hospital, and a special "carrier" card is given to patients, pointing out that they should report themselves periodically to the medical officer of health, so that the faeces and urine may be examined. The report contains an appendix by Dr. Scott, the Government Bacteriologist, giving the results of the examination of the blood of typhoid patients.

Census of 1911.

The report by the Registrar-General for Jamaica on the results of the census taken on April 3rd, 1911, shows that the population of the island was, including military and shipping, 831,383, and consisted of 397,439 males and 433,944 females (100 males to 109.1 females). These figures showed an increase of 191,892 since the census of 1891. Compared with twenty years ago the increase amounts to 30 per cent. The number of persons to a square mile increased from 143 in 1891 to 186 in 1911. The inhabited dwellings numbered 183,934, an increase of 49,389 since 1891. The average number of persons to an inhabited dwelling was 4.5, as against 4.7 in 1891. The number of persons deaf and dumb, blind, or insane returned showed an increase; 565 persons were returned as deaf and dumb, which is more than twice the number returned in 1891. The number of blind persons returned was 1,740, against 1,226 in 1891. The number of insane persons was 1,605, as against 855 in 1891. Of this number 1,169 are inmates of the lunatic asylum. Another point of interest in the report is a statement of the number of people according to their colour: 1.88 per cent. were white, 19.63 per cent. were coloured, 75.80 per cent. were black, 2 per cent. were East Indian, 0.25 per cent. were Chinese, and 0.35 per cent. were not specified.

Correspondence.

THE ARRIS AND GALE LECTURES ON SHOCK.

Sir,—When we learnt Euclid our studies included the acquisition of certain postulates. Mr. Mortimer's conception of "shock"—and in this he is not singular—is based upon the postulate that "shock" is necessarily associated with, and dependent upon, a low blood pressure: this postulate we have shown to be erroneous (for example, Chart 28, Trace 22, etc.), and, therefore, problems based upon such a postulate must necessarily be fallacious.

We sympathize heartily with Mr. Mortimer when, in the study of the problem of shock, he does not feel in the same happy position as in a study of a problem in Euclid. Our positions are identical—Euclid is an "exact science," and may we suggest that a problem in Euclid is, perhaps, a little more concise and elementary than the problem of shock? Again Mr. Mortimer's position is not singular.

The researches of most distinguished workers, as well as our own observations, both published and unpublished, prove that vasomotor variations during operations are of paramount importance. We hold that this is so, "not only from their own far-reaching effects, but also as a symptom or sign of vastly grav*er* disturbances to the physiology of the subject." Mr. Mortimer should not make the statement that *any* such variations do not prove of "appreciable pathological significance" unless he can prove it; this, we are sure, he cannot do. Mr. Mortimer clearly admits that he personally does not appreciate any significance in vasomotor variations, whose importance we hold to be beyond question. We confess that we are quite unable to understand his attitude.

We are glad to see that Mr. Mortimer considers our lack of attention to the state of the heart was only apparent. With regard to our statement that arterial blood pressure varies with increased cardiac output, when Mr. Mortimer laments the fact that we did not add, as a rider, the very obvious converse, is he appealing to our sense of humour? Further, we refer Mr. Mortimer:

1. To Lecture I, Part I: "Finally, the effects of chloroform on the heart muscle must not be overlooked." They were not.
2. *Dilatation from respiratory obstruction.* Asphyxial signs were in every case noted on the chart and carefully considered.
3. *General disorders* were always noted.
4. *Degenerative changes* were present in two instances, were noted, and formed the basis of important suggestions.

We showed that in health the response of the cardiac rhythm to trauma was in direct relationship with the variations in blood pressure—that is, the resulting sympathetic

response influenced both together. Any failure of the heart to respond to such stimuli (for example, from such causes as are suggested by Mr. Mortimer) must affect this intimate relationship, and would be obvious on the charts. A concurrent study of the respirations assisted in excluding factors (1) and (2). Finally, on every occasion during operations the observations of anaesthetist and surgeon, combined with our own observations, were invariably noted on the original tracings (and in the charts in most instances); these excluded clinically factors (1), (2), (3), and (4), referred to by Mr. Mortimer. When, therefore, Mr. Mortimer suggests that any of these factors were responsible for the drops in pressure to which he refers, the onus of *proof* rests with him.

We agree with Mr. Mortimer that ordinary concentrations of chloroform must affect the action of the heart to some degree, as it probably does in the case of all the tissues, and constitutes the *first step* towards complete poisoning (just as the first glass of wine constitutes the first step towards alcoholic intoxication); but this factor was common to most of the cases we studied, unless otherwise noted. Differences between the tracings, therefore, are due to other causes. These causes we endeavoured to study in their relationship to the mechanism of shock.

Diagram I refers to *complete blocks* to afferent impulses; any action of the anaesthetic agent short of complete paralysis was common to the same tissues in all cases to approximately the same degree, and—we repeat—is foreign to the immediate argument—that is, the *block* to impulses.

Mr. Mortimer says the vasomotor centre "cannot be absolutely unaffected"; he is quite right. In Lecture I, Part II, in the analysis of vasomotor variations in operations on the mastoid (chart not reproduced), Mr. Mortimer will find the words: "Chloroform .... *hardly* affected the vasomotor centre."

It is true we did not advise general anaesthesia in the control of mental shock in direct terms, but, as Mr. Mortimer states, left it to be inferred from the prolonged consideration of this subject, because we felt the inference to be so obvious. Examples of the similar action of general anaesthetics to other toxaemias were given in the lectures, and some were referred to in our first letter. Mr. Mortimer still complains. If Mr. Mortimer was left with the impression that general anaesthetics are to be "avoided whenever possible," that is assuredly not our fault, and is a misconception easily remedied by further perusal. We refer Mr. Mortimer to factors A, B, C, D, and E (the *degree* of toxaemia in factor E being of special importance) in "Preventive Treatment" and "Indications for Nerve-blocking"; also to the conclusion of our lectures advising spinal anaesthesia, "particularly in toxaemic children." We believe it unsafe, under certain conditions (vide A, B, C, D, E), to add the toxin of general anaesthesia to an already toxic subject. To use Mr. Mortimer's useful simile once more: Even if one glass of wine does not intoxicate a man, it would surely be unwise to give one glass of wine to a man who was nearly intoxicated with whisky; though this can hardly be said to convey the impression that one glass of wine is to be "avoided whenever possible."

Mr. Mortimer is justified in calling attention to the transient mental disturbance accompanying the lumbar puncture in administering spinal anaesthesia to children. The disturbance is about equal to that of a short fit of temper, and about as harmful (even this is usually absent in children who are in pain or very ill). For this reason we stated, and again affirm, "that *practically* no mental shock ever accompanies its use."

We would like to assure Mr. Mortimer that we accepted the observations of, co-operated with, and have frequently had the benefit of discussion with, capable and experienced anaesthetists during the prosecution of our researches. We do not claim great knowledge ourselves, but, apart from the study of the subject, both of us have given many thousands of anaesthetics in past years. The question of competence we are not, of course, in a position to defend; but we refer Mr. Mortimer to the two opening paragraphs of Lecture I and the concluding sentences of Lecture II, as showing that in no sense did we claim or expect "entire success."

Mr. Mortimer complains repeatedly of the absence of adequate proof of various statements, and we reiterate the apology given in the lectures and in our previous letter. But, in addition, we must refer Mr. Mortimer to the opening sentences in Lecture I:

> By these we do not claim to have thoroughly exhausted or completely proved any one aspect of the problem, but rather to have attempted a comprehensive view of the subject from almost every aspect.

(This includes, of course, that of the anaesthetist); also immediately above:

> It is unfortunately only too well known that in scientific research, in common with other researches, direct proof to establish the truth of any central doctrine is not always possible. If, however, we approach the subject from many different standpoints and all these lines of approach converge to meet at one point, then . . . that point or central doctrine is true.

The argument is Professor Henri Bergson's. Our views on the mechanism of shock are not proved, but chemical, clinical, experimental, histological, and therapeutic lines of research all supply considerable evidence in their favour. Consequently we advocate these views as sound in principle.

Mr. Mortimer holds that vasomotor variations "do not prove of appreciable pathological significance"; and though we appreciate his generous tribute, it seems clear that if that view is correct, and can be established, not one of our observations or deductions can have one particle of value.—We are, etc.,

London. H. TYRRELL GRAY.
Birmingham. LEONARD PARSONS.
July 30th.

TABLES OF STATISTICAL ERROR.

SIR,—In their important letter in your issue of July 13th Sir Ronald Ross and Mr. Stott refer to some points of such interest that I should be glad to have the opportunity of supplementing their remarks.

As a matter of verbal accuracy, I think the editorial note to which they allude does not state that Sir Ronald Ross and Mr. Stott's valuable tables were constructed for the treatment of precisely the kind of problem mentioned, but for questions *similar* to that problem. As a matter of fact, the laboratory worker, having to deal with that particular problem need not, for the purposes of an approximate test, employ any tables at all. Let him work out the following expression:

$$\frac{p_1 - p_2}{\sqrt{\left(\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}\right)}} \quad (1)$$

where n_1 is the number of cells examined in one sample, n_2 the number of cells counted in the second sample, and p_1 and p_2 are the number of large mononuclears divided by the total number counted in each sample. If (1), disregarding the sign of the numerator, is greater in absolute value than 3, it is unlikely that the two samples are from the same population. Naturally this rule is only a rough approximation and subject to many exceptions, but, as Sir Ronald Ross and Mr. Stott observe, a test which would not be adequate when the results are finally weighed in the balance, may be a convenient working rule.

As to the propriety of assuming the so-called normal law, the *rationale* of the matter is not, I think, so difficult to understand or so technical as Sir Ronald Ross and Mr. Stott suggest. For the class of problems here considered the genesis of the normal curve is quite simple. If we know, or *assume*, that the chance of an event happening (for example, the chance of any one cell in a number of cells being a large mononuclear) is p and of its not happening q, where $p + q = 1$, then it is a matter of simple algebra, within the power of most educated men, to show that the chances of getting $n, n-1, n-2, \ldots 0$ successes in n trials are given by the terms of the binomial $(p + q^n)$. If n is large, the arithmetical computation of these terms is very laborious, and it was shown long ago, generations before the birth of modern statistics, that the ordinates of a certain curve, the normal curve, approximate closely to the terms of the binomial. But the reasoning upon which this identification rests supposes that n is large or, for n small, that p and q are not widely different one from another—that is, that $p-q$ or $q-p$ are not large (I am, of course, stating the conditions loosely). The man in the street must see that this is true when he notes that the normal curve is symmetrical, and that if, for instance, p is very small, and n not large, ordinates drawn to scale repre-

senting the magnitude of the terms of the binomial and equidistant one on either side of the tallest ordinate are not sensibly equal in height.

The proper course to adopt in such cases is necessarily a matter for technical discussion, and I hope to publish very shortly a memoir on the subject, which may serve as a basis for such discussion in medical circles. I am only concerned to show here that in its origin the question is not really incomprehensible to the ordinary man.

In conclusion, I should like to refer to a matter I have much at heart. The importance of these mathematical or, if one objects to the arrogance of that term, these arithmetical inquiries, is becoming every day greater to medical men. At present workers are on the horns of a dilemma: they must either publish their results in medical journals, where the mathematical side of the work receives little attention, or in mathematical journals, the readers of which pay no heed to and are incompetent to criticize the medical problems involved. There are not, of course, nearly enough workers to justify an attempt to create a new journal, but there may be enough to form a small society for occasional discussion and mutual criticism. Should there be any others who agree with me on this point, I should be glad to hear from them. I do not think I am taking the honoured name of Sir Ronald Ross in vain when I say that he would cordially approve of such a society.—I am, etc.,

Lister Institute, Statistical Laboratory, July 15th. M. GREENWOOD, Jun.

TUBERCULIN TREATMENT.

SIR,—I was much interested in the letters called forth by your impartial leading article on tuberculin administration of July 6th. The chief desideratum at present would seem to be to reconcile the conflicting schools of thought on this subject. This is the more important when the recommendations of the Departmental Committee on Tuberculosis are considered. The difficulties of the situation are well shown by Dr. Nathan Raw, who, if I mistake not, some time ago stated that tuberculosis was a very docile disease to treat—I understood him to mean, by means of tuberculin. In his last communication he gives it as his opinion that "tuberculin can only be of service in a small percentage of cases." As I understand that Dr. Nathan Raw has used tuberculin in a large number of cases, his opinion should carry some weight. On the other hand, Dr. Camac Wilkinson believes that tuberculin is a specific which, if given correctly, will cure all cases, supposing they are sufficiently early, and, if I understand him aright, will benefit many if they are sufficiently late. I am convinced that Dr. Wilkinson has had many excellent results from his method of treatment. These divergencies of opinion, however, make it somewhat difficult to come to a definite decision. I think it may be stated, without incurring serious opposition, that tuberculin used in some cases produces marvellous results; it also seems clear that many cases, either because they have become mixed infections, or for other reasons, are not benefited at all; and, finally, there can be no doubt, as one might expect from theoretical considerations, that tuberculin is a two-edged weapon.

My own experience would lead me to suppose that the cases suitable for tuberculin treatment are early cases in which the diagnosis has been made by injecting tuberculin—that is, cases of closed tuberculosis with no sputum, and cases which have become chronic, where there has been much fibrosis, and, of course, often exhibiting a considerable amount of physical signs. All intervening classes of case, where the disease is active, and therefore exhibiting symptoms, are best treated in sanatoriums. In many of these cases it may be possible to commence tuberculin treatment after a period of prolonged rest. It is, of course, the cases just mentioned which most require treatment; they are the ones which tend to go on to a fatal termination; they are the cases which cannot easily be treated with tuberculin. One question which urgently requires to be determined is the wisdom or otherwise of subjecting a large proportion of the population to long courses of tuberculin treatment, in order to prevent a comparatively small number from finally breaking down.

It has occurred to me that the treatment of this disease by tuberculin is not always the same process, and I am inclined to the belief that cases treated with tuberculin, general reactions being ignored, may owe their cure to a different process than those which are treated without producing reactions. Another interesting point to be cleared up is the part sensitiveness plays in producing a cure, and whether by using large doses comparatively early sensitiveness is destroyed, and therefore it might be argued much larger doses would be required to produce any effect. It would seem probable that where a cure is brought about by tuberculin this is produced by the destruction of all tubercle bacilli which happen to be in contact with living tissues. The condition in which tolerance to the poison of the bacillus has been attained in its relation to cure is also of much interest.

I am inclined to think that variations of opinion occur because it is so difficult to reduce cases to a common denominator, and the different schools of thought are not only talking about different cases, but also probably of different phenomena, when discussing the action of tuberculin.—I am, etc.,

Ayrshire Sanatorium, July 13th. EDWARD E. PREST.

P.S.—In using a remedy like tuberculin there is a tendency to leave out of account the condition of the patient's tissues, which must be all-important, and are the determining factor as to whether benefit or otherwise will accrue.

PREVENTION OF CANCER.

SIR,—Medical observers are agreed that the chief predisposing causes of this disease are chronic irritation and injury. Therefore, if the following rules were observed there should follow considerable diminution in the mortality from cancer which, in the Harrow district, has caused more deaths than tuberculosis during the last five years.

Rules.

1. When warts, moles (especially dark coloured), and other skin growths are exposed to constant irritation they should be immediately removed.
2. Workers who use tar or paraffin are especially liable to hard, warty growths on the hands, forearms, and other exposed parts of skin. Treatment should be sought early for such growths, as they may readily go on to cancer. Sweeps should take daily baths to remove the soot. Workers with *x* rays should be effectually protected.
3. Avoid excessive smoking, as it predisposes to cancer of the lips, tongue, cheeks, etc. Inhaling cigarette smoke tends to cause cancer of the vocal cords.
4. Avoid irritation of the tongue and cheek by broken, jagged teeth, and of the lips by certain kinds of inferior clay pipes, which leads to cancer.
5. Avoid excessively hot food and drink, which induce cancer of the throat. Fluids and solids should not exceed 100° F. Many people take food and drink at 120° to 150° F.

5A. Avoid taking large quantities of iced drinks and ices, as digestion ceases when the temperature of the stomach is reduced below the normal, which is 98° F.

6. Masticate all food thoroughly, as food imperfectly chewed causes chronic irritation of the alimentary canal, involving the gullet, the entrance and outlet of the stomach, as well as that organ itself, and various parts of the large and small bowels, especially the termination of the former. Cancer of the food tract spreads to the liver, gall bladder, pancreas, etc.
7. Take great care of the back teeth or grinders, and see that all of them are present and in perfect order. Dentists should be employed to make good any deficiences. Money spent on the teeth will bring a greater return than any other investment.
8. Avoid bolting imperfectly masticated food. This bad habit can be cured by not drinking during a meal. Liquids may be drunk in small quantities at the end of a meal, or in larger quantities between meals.
9. Do not delay when cancer is suspected. Early recognition and prompt removal deprives cancer of its terrors. The mutual assistance of the public and the profession is essential to early diagnosis, and a grave responsibility rests on both. Thousands of lives of women suffering from cancer of the womb and of the breast could be saved by early diagnosis and operation.

9A. Avoid constipation. This is to be done by judicious diet and exercise; and should these fail, by physical and medicinal treatment.

10. Avoid the use of alcoholic drinks, as they are a predisposing cause of cancer, and diminish the average prospects of survival by 30 per cent.
11. Circumcision should be performed in early life.

—I am, etc.,

JOHN FLETCHER LITTLE,
Medical Officer of Health for Harrow-on-the-Hill.

London, W., July.

DIET IN THE TREATMENT OF CANCER.

SIR,—The efforts of Dr. A. Haig in the uric-acid-free diet treatment of cancer are of great interest and to be commended, but they have been unsuccessful, and, in my

opinion, a fallacy underlies them—namely, that the human organism, as at present constituted in highly civilized communities, can find physiological compensation in a diet of nuts, fruit, and biscuits, especially when the conditions are prejudiced by the presence of disease. Time was, probably, when nuts and fruits formed the greater part, if not the whole, of human sustenance, but for countless generations they have been replaced by meat, fish, and wheatmeal products. On such diet no doubt disease has flourished, and it has been assumed, and correctly, that it was responsible for a large proportion of it. But it is evident that this diet, like any other, may be responsible in different ways—that is, in regard to quality or quantity.

The case of Alice G. in the paper should help us. No one will reckon, on studying Dr. Haig's diet, that it was insufficient in quantity, yet Dr. Horder says: "I took this patient off the diet because she was losing weight rapidly, and because the local condition was definitely worse." Obviously, then, the loss of weight was not due to the quantity—probably far too much—of the food supplied, but to the quality—that is, the assimilability. Alice G. could not assimilate the special diet, because she was ill and her organism was accustomed to one entirely different. But, doubtless, she contracted her disease while on the ordinary diet to which her ancestors were accustomed, so that there must have been some imperfection in that.

Was it quality or quantity? Most likely the latter, for the great majority of people live on it, and by moderation many can attain to extreme old age. Would it not be better, therefore, to treat such cases with ordinary diet, but such an amount only of it as will lead to physiological compensation in the varying conditions of disease? My own limited experience of cancer cases is that the chronic ones are always those of spare people with small appetites. —I am, etc.,

Sheerness, July 17th. HOPE GRANT, F.R.C.S.E.

A STATE BOARD OF HEALTH.

SIR,—I beg to suggest that the time is now ripe for the establishment in this country of a State Board of Health, with a status similar to that of the Admiralty or War Office, a president of Cabinet rank, and a council composed mainly of eminent representatives of the medical profession. The idea is not a new one, but recent events have given it new importance. We are already in the the throes of the greatest changes in the history of our profession, and a powerful central authority is required to bring order and harmony out of the present chaotic state of medical affairs. One has only to mention the enormous death-rate from preventable diseases, the want of a uniform standard of examination for admission to the medical profession, the conditions of contract practice, the abuse of hospitals, the colossal advertising and sale of quack medicines, and the deadlock over the Insurance Act, to show the urgent need for co-ordination and organization in the army with which our country is fighting its direst enemy—disease.

The main functions of the proposed board would be:

(1) To advise the Government in matters of legislation affecting the public health or the medical and allied professions.
(2) To control the Public Health Service (including Schools Medical Service) and take all necessary measures for the promotion of the public health.
(3) To control the medical, dental and nursing professions as regards education, registration, professional ethics, regulation of contract practice, restriction of unqualified practice, etc
(4) To control in similar manner the pharmaceutical profession, and to regulate the advertising and sale of drugs.
(5) To control the administration of sickness, accident, and invalidity insurance, both compulsory and voluntary.
(6) To control the administration of hospitals, asylums, dispensaries, nursing homes, sanatoriums, and all other medical institutions, whether public or private.
(7) To promote research (individual and collective) into the nature and causation of disease and the means of its prevention and cure.

These functions, which form a natural and interdependent group, and obviously ought to be correlated under a single authority, are at present discharged (some of them most inadequately) by a host of independent and more or less conflicting boards, councils, and associations which would have to be superseded, modified, or incorporated with the new scheme, according to circumstances.

The new board would have to be assisted by committees and staffs to deal with the various departments of its work, and for this purpose many of the existing authorities could be made use of. Purely medical matters would of course be attended to by purely medical committees.

It seems to me that by the establishment of such a board the medical and allied professions would gain enormously in status and efficiency, and would secure the influence they ought to have, but hitherto have not had, in the counsels of the nation.—I am etc.,

J. E. ESSLEMONT, M.B., Ch.B.

West Southbourne, July 25th.

Dr. H. E. BRUCE PORTER (6, Grosvenor Street, London, W.) writes as one interested in the improvement of food inspection to advocate a Minister of public health with Cabinet rank. "Had there been one," he adds, "at the present time, we should certainly have been spared the fiasco of the Insurance Act. The profession appears to be very united at the present moment, and so pressure might be brought to bear to do something in this direction of a Minister of health."

THE SEPTIC CRICKET BALL.

SIR,—The silly season has evidently begun, in the medical as well as in the lay press. Our hair rises with terror when we think of the awful calamities which may befall us if we indulge in a sporadic game of cricket, and our thanks are due to the writer of the above-named leader for his timely warning.

The majority of bowlers lick the tips of their fingers before delivering the ball, whether professionals or amateurs, but has one single instance ever been recorded where lockjaw has been traced to this rash procedure? We are relieved to hear that there is at least one member of our profession who is not afraid to do likewise, and who does not play the game of cricket as though he were performing an aseptic surgical operation.

As for the "pallid, corkscrew-like microbe of another terrible disease" which may infect us—well, if we limit our risks to its acquaintance on cricket balls, we shall not fare badly. Even a butter merchant can be killed by a thunderbolt.

We do not wish to deny the value of preventive medicine, but for Heaven's sake let us remember that there is a limit in all things. Perhaps an enthusiast would like to see our national game played in sterile overalls, the ball painted with tincture of iodine after every over, and each individual player previously examined for signs of specific disease by a cricketing medical officer of health.—I am, etc.,

Stourbridge, Aug. 5th. G. LOWELL WEBB.

THE FOUNDERS OF THE LIVERPOOL SCHOOL OF MEDICINE.

SIR,—In the *Handbook* of the annual meeting of the Association at Liverpool, p. 95, it is stated—"and the autumn of 1834 saw the Liverpool Institution of Medicine and Surgery formed." May I be allowed to supplement the list of names there given of those first associated with the organization? Dr. Formby on medicine, Mr. Dawson on surgery, Dr. Malins and Mr. Batty on midwifery, Dr. Philp and Dr. Malins on medical jurisprudence.

My father, Samuel Malins, studied at St. Bartholomew's Hospital, became a Member of the Royal College of Surgeons, Doctor of Medicine of the University of Edinburgh, Bachelor of Letters of the University of France. He was an accomplished scholar of the French, German, and Italian languages. His early death, in the year 1843, at the age of 36, closed a career which reasonably afforded a great promise of future success. In justice to his memory, and of those joined with him in this object, I may be pardoned for this brief note. Great changes have taken place since that period, developments which have given the Liverpool School of Medicine so important and distinguished a place in medical education. —I am, etc.,

Birmingham, Aug. 5th. EDWARD MALINS.

THE ANNUAL DINNER.

SIR,—I should be glad if members of the British Medical Association who bought tickets for the Annual Dinner and, on finding they were unable to make use of them, *notified*

me beforehand, will write to Dr. Charles Hill, 13, Rodney Street, Liverpool, in order that he may refund the amounts paid, if this has not been done already.

As far as we know the money has been returned to all who notified me beforehand, and so allowed me to dispose of the tickets, but there may be some who have been overlooked.—I am, etc.,

W. BLAIR BELL,
Honorary Secretary, Dinner Committee.

Liverpool, August 2nd.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved in the examinations indicated:

FIRST M.B.—E. M. Atkinson, J. A. Birrell, Alethea J. Bolton, Marian N. Bostock, W. W. Brown, L. J. F. Bull, A. W. B. Carless, L. A. Celestin, J. D'A. Champney, C. C. Chesterman, A. H. Clarke, Doris M. Collins, P. N. Cook, J. M. Courtney, R. Coyte, Dorothy T. Daintree, T. M. Davies, M. A. B. Demerdash, Hilda M. Denton, E. de Robillard, K. Dykes, T. G. Dykes, T. S. Evans, G. Fehrsen, J. L. R. Fortier, †A. R. Fuller, W. B. Gabriel, L. Gill, *W. Gover, A. R. Hart, R. B. Hawes, N. N. Haysom, W. B. Heywood-Waddington, E. B. Hickson, F. G. E. Hill, J. C. C. Howe, J. F. Howells, P. Hughes, J. B. Hume, J. W. Hyatt, Helen Ingleby, S. R. Johnston, T. John-Thomas, C. A. Kirton, V. J. F. Lack, H. W. Lewis, N. M. Lewis, R. T. Lewis, A. Lyell-Tayler, M. H. MacKeith, F. C. Mason, B.A., Cecily M. E. Maude, *†R. G. Mayer, ‡M. W. H. Miles, L. C. Moore, G. Moulson, R. V. Norton, J. H. Oonvala, Margaret S. Palmer, E. F. Peck, J. W. G. Phillips, B. H. Pidcock, ‡C. V. Pink, H. T. Prys-Jones, W. M. A. Rahman, K. M. Ross, W. R. Rowlands, M. Schwartz, A. Selby-Green, A. Shafeek, R. G. Simpson, G. H. Sims, Lily D. Taylor, A. L. Telling, R. N. Vakil, Lotty Weihermann, J. P. Williams, *‡O. Williams, T. P. Williams, A. Williams-Walker, W. Yeoman.

* Awarded distinction in Inorganic Chemistry. † Awarded distinction in General Biology. ‡ Awarded distinction in Physics.

SECOND M.B., PART I (*Organic and Applied Chemistry*).—J. S. Alexander, F. M. Allchin, Hannah K. Alton, R. T. Bailey, G. T. Baker, Ruth Balfour, G. E. Barker, W. R. Barrett, R. V. Bevan, J. W. Bigger, J. A. Binning, E. S. Bowes, H. G. Broadbridge, O. St. L. Campion, L. A. Celestin, Hester M. Church, A. W. Cocking, W. H. Coldwell, R. C. Cooke, T. R. Davies, *L. S. Debenham, A. R. Dingley, R. O. Eades, C. Y. Eccles, S. H. Edgar, L. P. L. Edwards, L. W. Evans, R. Fazan, Marjorie E. Franklin, W. L. M. Gabriel, J. W. H. Grice, Grace M. Gulston, A. G. Harsant, M. H. Hassan, N. H. Hill, H. M. Holt, G. P. B. Huddy, S. W. Isaacs, J. P. J. Jenkins, D. B. S. Jones, G. S. L. Kemp, H. Korn, R. P. Langford-Jones, Mildred B. Langley, F. F. Langridge, F. R. Law, H. Lewis, I. H. Lloyd, Katharine Lloyd, D. Loughlin, S. A. S. Malkin, F. K. Marriott, Marie M. A. Moralt, R. G. Morgan, J. K. Muir, S. Muttiah, Eleanor J. Partridge, *B. C. W. Pasco, *A. W. Peeris, R. L. Portway, R. V. Powell, T. E. Roberts, Elisabeth H. Schwab, E. W. Scofield, N. M. Sen-Gupta, W. Steadman, H. G. Stormer, R. Stowers, E. C. Tamplin, A. C. Teuten, M. B. M. Tweed, J. F. Twort, W. J. Vance, S. Vidot, W. J. G. Walker, Josephine L. H. Wallace, J. W. Wayte, W. R. White-Cooper, J. de S. Wijeyeratne, A. F. Wyatt, C. F. B. Wyborn, G. C. N. Younger.

* Awarded a mark of distinction.

UNIVERSITY COLLEGE.

Entrance Scholarships.

The following awards have been made: The *Bucknill Scholarship* (value 135 guineas), C. J. C. Cooke, of the Technical College, Derby. *First Medical Exhibition* (value 55 guineas), E. Sakoschansky, of University College, Nottingham. The *Second Medical Exhibition* (value 55 guineas), T. M. Cunnington, of University College, London, and University College School.

LONDON HOSPITAL MEDICAL SCHOOL.

The following demonstrations will be given during the months of August and September in the clinical theatre at the hospital at 2.15 on each day: Monday, Diseases of the Pleura: Dr. Wall. Tuesday, Diseases giving rise to Morbid Renal Excretion: Dr. Grünbaum. Wednesday, Diseases of Children: Dr. Hutchison. Thursday, Diseases of the Nervous System: Dr. Thompson. Friday, Diseases of the Heart: Dr. Lewis Smith. The demonstrations began on Tuesday, August 6th. Members of the profession will be admitted on presentation of their private cards.

KING'S COLLEGE HOSPITAL.

Scholarships.

The following awards of scholarships and prizes have been made: *The Senior Scholarship*: Mr. J. R. Waddy. *The Tanner Prize*: Mr. H. A. Richards. *The Todd Prize*: Mr. A. S. Wakeley. *Special Clinical Surgery Prize*: Mr. S. Smith. *The Prize in Medicine*: Mr. S. Smith. *The Prize in Surgery*: Mr. S. Smith. *The Prize in Forensic Medicine*: Mr. V. W. Draper.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

Appointments.

The following appointments have been made: Mr. F. Wood-Jones, M.B., B.S., D.Sc.Lond., Demonstrator in Anatomy, St. Thomas's Hospital Medical School, to be Lecturer and Head of the Department of Anatomy in succession to Mr. F. G. Parsons, F.R.C.S., who has resigned. Mr. J. A. Gardner, M.A.Oxon., F.I.C., to be Lecturer in Organic Chemistry and Head of the Department of Chemistry in succession to Miss C. Evans, D.Sc., who has resigned. Miss Widdows, B.Sc., to be Lecturer in Inorganic Chemistry. Miss M. D. Waller, B.Sc., to be Demonstrator in Physics.

Scholarships.

The following scholarships have been awarded: *The St. Dunstan's Medical Exhibition*, value £60, for three or five years, to Miss A. M. Kerr, of the Clapham High School. The *School Scholarship*, value £30, to Miss E. M. Scarborough, of Trinity Hall, Southport. *The Dr. Edith Peachey Phipson Post-Graduate Scholarship*, value £40, to Miss C. L. Houlton, M.B., B.S. Lond.

UNIVERSITY OF SHEFFIELD.

THE Council of the University, at its last meeting, made the following appointments: Mr. Harold Leader, M.B., M.R.C.S., L.R.C.P., to be lecturer in diseases of children; Mr. H. Nield, M.B., Ch.B., to be demonstrator in anatomy; and Mr. E. F. Finch, M.D., F.R.C.S., and Mr. P. A. Reckless, F.R.C.S., to be honorary demonstrators in anatomy.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates were approved at the examinations held at the end of the 39th session:

*W. P. Chamberlain (Major, U.S. Army), *W. Lapsley (Captain, I.M.S.), *F. C. McCombie, H. Emslie Smith (Captain, I.M.S.), *H. R. Price (Major, I.M.S.), *W. Allen, *S. L. Brohier, *W. J. Geale, *J. E. L. Johnston, *A. H. Owen, *B. Spearman, W. F. M. Loughnan (Captain, R.A.M.C.), J. F. Corson, H. B. Rosair, A. R. Neligan, A. C. N. McHattie, J. C. C. Hogan, J. L. Gilks, W. Telfer, N. A. Dyce Sharp, H. B. Blaker, A. Lionel Smith, A. B. Arora, E. S. Marshall, H. Fleming, A. D. J. B. Williams.

* Passed with distinction.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—Catherine M. Anderson, W. C. Borrie, J. S. M. Conner, E. Dias, W. O'G. Donoghue, P. F. Fairley, C. Harris, T. Jackson, W. P. H. Lightbody, R. MacKinnon, D. R. Nicol, A. A. B. Noble, G. L. Pillans, J. R. B. Robb.

SECOND COLLEGE.—L. Ghose, C. C. Irvine, H. O. Martin, W. M'Alpine, J. M'Farlane, S. Swaminathan, J. Walker.

THIRD COLLEGE.—A. Crawford, R. J. Croxford, G. B. Hanna, J. MacRae, W. A. Rees, J. Remers, C. A. Slaughter, B. S. Thakur.

FINAL.—J. G. Morrin, F. W. White, H. A. Topalia, G. W. Mason, T. N. Wilthew, J. P. Carroll, J. M. Coplans, L. C. Mascarenhas, K. Want, E. C. Hamilton, F. F. Keravalla, P. Walsh.

Obituary.

WILLIAM HODGSON CARRUTHERS, M.D., M.R.C.S.,

HALTON, CHESHIRE.

THE death of Dr. Carruthers, of Halton, a highly-respected member of the profession, occurred with tragic suddenness as he was about to leave his motor car on July 22nd, and the news caused profound sorrow. Dr. Carruthers was one of those men whose personality was of such a kind that he leaves a void that will be extremely difficult to fill. He was of such a lovable, kindly nature that he lived amongst the people and for the people, and although he lived to within two years of the allotted span of life, no one could believe or apprehend any danger as he left his happy home to pursue his ordinary work on that morning. Dr. Carruthers had a very distinguished professional career, never knew what it was to complain about the excessive demands on his time, and was always willing and ready to attend to the many professional calls for his valuable services. He was unselfish to a fault, and was never known to deny his services to the poorest of the poor at any hour day, or night. No one was kinder or more anxious in the exercise of his calling to be of service to his fellow-man, and the world is all the poorer by his demise. Dr. Carruthers was a highly gifted, well-read, cultivated man, and quite up to the time in which he lived in the literature and practice of his calling. When he left to go his rounds, he appeared to be in his usual health, and made no complaint to any member of his family or to any one about him.

Dr. Carruthers was born in Lymm, Cheshire, in December, 1844, and two years later his parents removed to Halton, Cheshire, where he spent the remainder of his life. His father was a well-known and highly popular member of the profession. The subject of this notice received the greater part of his early education at Arnold House, Higher Broughton, Manchester, and in 1862 took

the silver medal of his school for general proficiency. He received the first part of his medical education at the Manchester Medical School, subsequently proceeding to the Rotunda Hospital, Dublin, and Edinburgh University. He qualified M.R.C.S. in 1867, and M.D.Edin. in 1870. He had a very distinguished university career, and after qualifying he filled the important offices of Senior and Junior House-Surgeon and Physicians' Assistant at the Manchester Royal Infirmary. At the expiration of his terms of office he returned to Halton to help his father to conduct a large general practice, for which he was eminently qualified. On the death of his father in 1881 he succeeded to the various appointments — such as Parochial Medical Officer, Public Vaccinator; and subsequently, when the Runcorn Union was divided for sanitary purposes, he was appointed Medical Officer of Health for the Halton and Weston Districts. This appointment subsequently became merged with two other sanitary districts of the union into one much larger area. When the vacancy arose he did not apply for the appointment. He continued to hold all the other appointments up to the time of his death. He was a keen observer and a highly successful practitioner, and for some years past was asked constantly in consultation by his professional brethren all round the district in which he lived. His large and wide experience helped to make him a very acceptable and successful consultant. His annual sanitary reports proved him to be a close, shrewd, and cultivated observer, much in advance of his time.

His remains were carried to their last resting-place at the beautiful churchyard of Aston-by-Sutton amongst the universal sympathy and sorrow of the whole countryside. The whole of the medical men of Runcorn, Frodsham, and surrounding districts attended to show their respect and profound sorrow, and of him it may be truly said that he did not leave a single enemy behind him.

Dr. Carruthers married Miss Mabel Hodgson, of Carlisle, nineteen years ago. The widow and two daughters survive to mourn their sad and irreparable loss. His eldest daughter died four years ago, after a short and acute illness, and this loss was a terrible blow to her devoted father, from which he never recovered. His personal friends recognized that his health was severely shattered, and that from that time his usual buoyant spirits began to droop.

ARTHUR TREHERN NORTON, C.B., F.R.C.S.,

CONSULTING SURGEON TO ST. MARY'S HOSPITAL, LONDON.

WE have to announce with much regret the death, on August 4th, after a serious operation, of Mr. A. T. Norton, consulting surgeon to St. Mary's Hospital, London.

Arthur Trehern Norton, who was born on August 17th, 1841, was the second son of the late Dr. Robert Norton. He was educated at Totteridge Park School and St. Mary's Hospital. He became a member of the Royal College of Surgeons of England in 1862 and a Fellow in 1867, and and in early life was engaged in teaching anatomy. At this period of his career he published books entitled *Osteology for Students*, which reached a second edition, and *The Examiner in Anatomy*.

After serving as Assistant Surgeon he became Surgeon to St. Mary's Hospital and Lecturer on Clinical Surgery in the Medical School. On his retirement from London and from practice to reside near Ashampstead, Berks, he was appointed Consulting Surgeon to the hospital. He took a lively interest in the medical education of women, and was one of the founders of the London School of Medicine for Women. At one time he was an active contributor to the medical periodical press, and was for some years editor in London of the *Medical Press and Circular*.

Mr. Norton became a Licentiate of the Society of Apothecaries of London in 1862, and thirty years later was appointed one of its examiners, a post he retained for six years. In 1901 he became a member of the Court of Assistants, was Warden in 1908–1910, and Master for the year 1910-11; he had represented the Society on the General Medical Council since 1910.

He served with the English ambulance in France during the Franco-German war, and was decorated by the French War Office for his services. From an early date he took a keen interest in ambulance work, was an officer of the Volunteer Medical Staff Corps, and commanded the London Companies. On his retirement in 1897 he was made C.B. He also received the Jubilee Medal and the Volunteer Officers' Decoration, and was an Honorary Associate of the Order of St. John of Jerusalem. He was a member of the War Office Committee which made recommendations with regard to the development of the Volunteer Medical Service.

JAMES McILROY, M.B., C.M.GLASG.,

BALLYCASTLE, CO. ANTRIM, IRELAND.

WIDESPREAD regret was felt throughout North Antrim when it was learnt that on Sunday, July 28th, Dr. James McIlroy had passed away.

Born sixty-six years ago at Mallindobet, co. Antrim, he was early destined for the medical profession. After a distinguished career at Glasgow University, he graduated M.B., C.M., with commendation in 1867. Shortly after graduation he was appointed Medical Officer to the Castlequarter Dispensary District, and continued to hold this position until 1888, when a deputation from the Ballycastle Board of Guardians invited him to apply for the post of Medical Officer to the Ballycastle Dispensary District which had fallen vacant. He accepted the invitation, and became Medical Officer also to the Ballycastle Workhouse Infirmary and Fever Hospital. He held the posts of Medical Officer to the Royal Irish Constabulary and Post Office in Ballycastle and Armoy, and to the Rathlin Lighthouse. In January, 1911, he resigned his dispensary appointment, and in September his workhouse duties. His retirement was due to symptoms of spinal paralysis the result of a carriage accident sustained some years ago while attending to his professional duties. The onset of the symptoms was very insidious, but in spite of every attention on the part of his medical colleagues in London and elsewhere he became gradually unfit for active work. The last six months were shadowed by recurrent attacks of acute cystitis, but during the few weeks preceding his death considerable improvement had set in, and hopes were entertained that he might yet be restored to a measure of good health. An unusually severe attack, however, set in with involvement of the kidneys, and he died within a few hours of its onset.

Dr. McIlroy was a man of exceptional professional abilities, which, together with his striking appearance and charming personality, won for him universal respect and devotion. He was a skilful surgeon and his services were in demand throughout the length and breadth of the county. A staunch Conservative, he nevertheless numbered among his friends those who differed from him in creed and politics. A magistrate for the county, his sympathy was always with the oppressed. His services were given to the poor as willingly as to the rich. He was unfailing in his attention to duty, and his splendid physique rendered him almost immune to illness and fatigue. His death has left a gap in the hearts of the people which it will be difficult if not impossible to fill.

Dr. McIlroy leaves a widow and four daughters, two of whom are members of the medical profession.

Medico-Legal.

MIDWIFERY ATTENDANCE.

T. W. writes that he was engaged to attend a confinement in the case of well-to-do people, some seventy-six miles away from his own residence. He was sent for too early, but waited for six days at the patient's residence. He was then compelled to return home on account of important business, and the patient was delivered a few days later by a local practitioner. He wishes to know whether he is entitled to send in an account for his services until superseded, and would like to be advised as to what charges he should make.

*** In such a case the local practitioner might have attended for our correspondent and the fee agreed upon divided. If no fee had been fixed beforehand, our correspondent is entitled to charge the full value of his services in addition to cost incurred up to the time he was superseded. As to what these charges should be, he is the best judge, and should be guided by the custom of the profession in his neighbourhood.

MERCURIAL POISONING AND THE WORKMEN'S COMPENSATION ACT.

A. H.—A workman who believes himself to be suffering from mercurial poisoning contracted in the course of his employment must in order to establish a claim under the Workmen's Compensation Act present himself for examination to the certifying factory surgeon. The defence of the employer in such a case might be to dispute the diagnosis, or to assert that the poisoning was contracted otherwise than in the course of the man's employment. The burden of proof lies on the workman.

Public Health AND POOR LAW MEDICAL SERVICES.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Letter from the Local Government Board.

AT a recent meeting of the Hambledon (Surrey) Board of Guardians, a letter was read from Dr. J. K. Willis, of Cranleigh, pointing out that the relieving officer had referred to him cases of children requiring treatment for enlarged tonsils and adenoids, following the medical inspection carried out in the elementary schools. Such cases had hitherto been treated at the hospitals, but they were not now eligible for treatment at such institutions. He asked if the guardians were prepared to pay a reasonable fee for the treatment of such cases, suggesting 10s. 6d. for the operation and 10s. 6d. for the administering of the anaesthetic. The guardians communicated with the Local Government Board, and received the following reply:

Local Government Board,
Whitehall, S.W.,
June 27th, 1912.

Sir,

I am directed by the Local Government Board to acknowledge receipt of your letter of the 8th instant relative to the arrangements in the Hambledon Union for the treatment of children attending elementary schools who require attention on account of enlarged tonsils or adenoids.

In reply the Board ask me to point out that the general responsibility for the administration of Poor Law relief rests with the guardians. They consider that, if an order for medical relief is given by the relieving officer in any case of the kind in which application is made to him, the district medical officer should examine the child, and if he considers that an operation or special treatment is necessary, should report the circumstances to the guardians. It will then rest with the guardians to decide whether the case is one for relief at the cost of the poor rates, and, if so, whether they should authorize the medical officer to proceed at his discretion or should take further advice.

If an operation or special treatment is necessary and is carried out by the medical officer with the approval of the guardians, the Board recognize that, although no fee is legally payable under the regulations, a reasonable gratuity should be paid for the services rendered. The Board would be prepared in this connexion to allow a gratuity of one guinea in respect of each operation for the removal of tonsils and adenoids as suggested by the guardians; but such gratuities should be reported individually for the Board's sanction.

I am, Sir,
Your obedient servant,
(Signed) J. S. DAVY, *Assistant Secretary.*

Sir William Chance, Bart., the well-known authority on the Poor Law, and one of the guardians, said he was glad that such an answer had been received from the Local Government Board, because he had always held that boards of guardians had power to give relief in those cases, and that it was quite unnecessary to refer the matter to any other authority. He thought the doctors were justly entitled to the extra remuneration, and he wished the Local Government Board's letter could be published generally, because it showed what the powers of guardians were in the matter.

It was decided to send particulars of the letter to the medical officers of the union.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Colchester Borough.—Dr. W. F. Corfield, the Medical Officer of Health of Colchester, has based his statistics for 1911 upon the census population of 43,463, and not, as is customary, upon the estimated population at the middle of the year. The net birth-rate was 22.4 per 1,000, and the net death-rate 12.4 per 1,000. The infant mortality-rate was equal to 105 per 1,000 births, compared with an average rate of 95 in the previous five years. Early in the year special work was undertaken to try and find out if there were any rats in the district infected with plague. The whole district was divided into eleven divisions, and a rat-catcher employed to visit each in turn. Altogether 348 rats were caught and sent to the laboratory established at Ipswich, where they were examined on behalf of the Local Government Board. All but five showed no signs of plague, and further and more detailed examination gave a negative result even in these five. At a later date 373 more were examined, all negatively. A rat-catcher was also continuously employed by the corporation, and his work, in Dr. Corfield's opinion, has been productive of much good. Before the arrangements were made for sending rats to Ipswich rat virus was supplied free of charge to those applying for it at the Public Health offices.

City of Hereford.—In presenting his annual report for the year 1911, Dr. Miller states that the death-rate for the city was higher than in 1910. The increase was partly owing to intimation of additional deaths of residents outside the city, through the Registrar-General. Although the death-rate was higher than in 1910, the death-rate of children under 1 year was 92 per 1,000 births, compared with a rate of 101 for 1910. In common with other towns the birth-rate is decreasing; it was 19.11, compared with 21.85 during the preceding year, and an average of 22.1 for the five years 1905–10. The death-rate (14.8) was slightly in excess of that for the previous year, but compares favourably with the death-rates of other towns of the same size. Phthisis accounted for twenty-two deaths during the year, giving a rate of 0.97, compared with a rate of 1.14 for the previous five years. Action was taken in connexion with the Housing and Town Planning Act in fifty-eight cases—the defects being mainly due to dirty and damp ground-floors and walls and general dilapidation. The water-supply of Hereford seems satisfactory; two new filter beds have been provided which cover an area of 20,000 square feet each. As school medical officer for Hereford, Dr. Miller made eighty-two visits to the various schools in Hereford, examining 828 children. The most prevalent defects found were defective vision, enlarged tonsils, adenoids, decayed teeth, deafness, and verminous heads. Dr. Miller states that the weights and heights of the children of Hereford compare favourably on the whole with the children in urban areas. Any difference in height is very small, and in regard to weight, the greatest difference is slightly over 1 lb. With regard to the treatment of defects, the routine pursued in Hereford was that on the completion of the inspection a list of the defects found was sent to the teacher. After an interval inquiries were made through the teacher in regard to the treatment carried out, and where there had been no treatment a second notice was sent to the parents, and if nothing was done a third notice. The question of providing treatment at a clinic for medical and dental defects is at present under the consideration of the Education Committee, and it is hoped that an arrangement with members of the medical and dental professions may be arrived at.

THE APPOINTMENT OF M.O.H.

ERGOT.—We are not aware of any regulation which would prevent the Local Government Board sanctioning the appointment as medical officer of health of a medical practitioner who acted as assistant to another practitioner.

Medical News.

A SERIES of special demonstrations on the administration of tuberculin will be given at the Brompton Hospital for Consumption from September 2nd to September 7th. The fee for the course is two guineas.

A CASE of plague has occurred in Liverpool. The patient was a boy aged 7 years, admitted to the Royal Infirmary on July 25th, and operated upon for appendicitis. A gland removed from the groin was found to contain the plague bacillus, and this diagnosis has been confirmed on bacteriological examination for the Local Government Board. No information as to the probable source of the infection has been published, but the boy resided in a neighbourhood inhabited by dock labourers.

THE Harrogate Corporation has entered into an arrangement with Mr. Arthur Smithells, F.R.S., Professor of Chemistry in the University of Leeds, for a scientific examination of the spa waters. Professor Smithells's work will include much more than an analysis of the various waters, for, with the co-operation of colleagues in the university, a chemical, physical, and geological survey of the whole system of springs will be instituted and a scientific investigation made of various points in connexion with their utilization.

AT a meeting of the council of the Metropolitan Hospital Sunday Fund on July 30th, the Lord Mayor (Sir Thomas Crosby) in the chair, the Distribution Committee recommended awards amounting to £52,294, of which sum 7½ per cent. was appropriated to the purchase of surgical appliances and 2½ per cent. to district nursing associations. The other awards ranged from £5,693 downwards, St. George's Hospital receiving a grant of £1,581. The committee was requested to investigate the question of how much ought to be allowed as the average cost of an out-patient at each visit.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

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AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

E. P. asks for advice in the treatment of an unmarried woman, aged 24 years, who is suffering from angio-neurotic oedema.

REPAYMENT OF PETROL DUTY.

H. L. uses a car principally for pleasure, but partly for visiting patients, and desires to know on what basis he can obtain the abatement of petrol duty.

*** The authorities will probably be content to accept a declaration that a certain proportion of the petrol used has been consumed while the car was used for the purposes of the profession, the proportion being arrived at on our correspondent's estimate. If objection be taken to this estimate, and no agreement can be arrived at with the excise officer, there seems to be no alternative to keeping a record of the mileage.

ANSWERS.

SCOTIA.—No objection to ladies cycling seems to have been generally felt by the medical profession provided that no undue exertion is involved.

J. F. K.—The length of time during which vaccine lymph remains most effective after being stored in sealed tubes varies with the temperature of the place in which the tubes are stored and the absence of light. Vaccine lymph issued by the Local Government Board to public vaccinators is expected to be used within seven days. In *Vaccination, its Natural History and Pathology*, by Dr. S. Monckton Copeman, reference is made (p. 185) to the "Duration of Activity of Glycerinated Calf Lymph." Under favourable conditions vaccine lymph can be stored and remain active for several years.

NOCTURNAL CRAMP IN DIABETES MELLITUS.

DR. F. ERNEST WITHERS (Horncastle, Lincolnshire) writes to recommend "R.T.N." to try the administration of gr.xv of sodium bicarbonate at bed-time; better results may be got from two doses of gr.x, the first being given after the midday meal and the second at bed-time.

TREATMENT OF FOUL-SMELLING EVACUATIONS.

DR. H. OPPENHEIMER (London, E.C.) writes in reply to "Oxon": I beg to suggest a fat-free diet and cachets containing 10 grains of benzo-naphthol with 5 grains of salol three times a day after meals.

DR. H. J. THORP (Ipswich) also writes to suggest calomel ¼ to ½ grain every night, followed in the morning by a dose of effervescent potassic aperient with sulpho-carbolate (Martindale).

LETTERS, NOTES, ETC.

LOCUMTENENT.

DR. A. G. BATEMAN, General Secretary of the Medical Defence Union, 4, Trafalgar Square, W.C., writes: May I once again ask your readers—especially those in the Eastern counties—who may receive an application from either "Dr." George Covey or "Dr." Richard Nunn for appointment of locumtenent, to communicate with me before entering into any contract or placing their practices in the hands of these individuals; or if they have already engaged such, to let me know at once.

AN APPEAL.

WE have received an appeal on behalf of Dr. John Henry Sharpe, of Berrow, Burnham, Somerset. Dr. Sharpe, who graduated M.D. in the Royal University of Ireland in 1885, is completely incapacitated from professional work by locomotor ataxy, and is almost entirely dependent on the funds of the Medical Sickness, Annuity and Life Assurance Society for the maintenance of himself and a large family. His friends are desirous of obtaining for him the possession of a hand-propelled tricycle, which would much brighten his life. A committee has been formed, consisting of Dr. Bird, Castle Street, Bridgwater, Honorary Treasurer; Dr. Routh, Bridgwater; Dr. Berry, Burnham; and Dr. Kelly, also of Burnham, Honorary Secretary.

TUBERCULOUS CASES SENT TO AUSTRALIA.

DR. RICHARD ARTHUR (President, Immigration League of Australasia, Sydney) writes: During the last few years I have seen a large number of cases both of early and late phthisis among immigrants who have come from Great Britain to Australia. These persons allege that they have been advised by doctors to proceed here, as the climate would affect a cure in their cases. Most of these immigrants are lads and young men, and their lot on arrival here is a very unhappy one. They are totally unfit for the hard work of a farm, and they either have to be sent to a consumptive sanatorium or shipped back to England. If what they state about medical advice be true, it is surely very cruel for any medical man to take upon himself the responsibility of sending a patient 12,000 miles from home, where he arrives very often almost penniless, and where he receives a very scant welcome. If these cases are curable, they can be dealt with much more satisfactorily at home, and, if not, it is surely better for them to die surrounded by the care and affection of relatives, than among indifferent strangers who resent having this burden cast upon them. I trust that this warning may do something to prevent such cases being sent to Australia.

CHANGES IN THE CONCEPTION AND TREATMENT OF INSANITY.

DR. A. W. GILCHRIST (Nice) writes: At the Leicester meeting of the British Medical Association in July, 1905, I took part in the discussion on the relationship between heredity and disease (see BRITISH MEDICAL JOURNAL, October 28th, 1905). Dr. Mott, the President of the Section, had requested Mr. Hurst, an authority on the subject of Mendelism, to demonstrate some of his botanical and zoological experiments, and Mr. Bond, in addition to the address in surgery, had presented for our consideration from the same biological point of view a collection of striking pathological observations. It was probably the first occasion on which the discoveries of the Abbot of Brünn had been considered in the light of their relation to problems of medicine. For this reason it was, perhaps, that the subject was so inadequately treated. In any case, no answer was offered then or subsequently, I may add, to the objections I was able to advance. These objections were contained in an article published by Le Dantec in an April number of the *Revue scientifique* of the previous year (April 23rd, 1904). Le Dantec contended that Mendel's law is only applicable to a restricted number of characters of discontinuous heredity. He further looked upon Mendelian inheritance as merely the heredity of diatheses, and therefore deprived of general application. Are such conceptions, then, I asked, destined to exercise a marked and permanent influence on medical theories of heredity, or are they rather, as Le Dantec implies, little more than a temporary revival of Weismannistic faith? The able address which forms the subject of the present letter would seem to prove that this influence was greater than I anticipated.

In spite of the notable progress made generally in medical science during the last quarter of a century, no increase in the relative number of recoveries from insanity is perceptible, Dr. Turner tells us. Nor does the remedial treatment, prophylactic or curative, likely to be adopted in the immediate future, offer a much more encouraging prospect. It is useless, for instance, to sterilize the unfit; we read, "in the long run Nature sterilizes for us." Can any of your readers discover a difference between this Mendelian sterilization (Dr. Turner refers to Gregor Mendel's experiments) and the elimination of the unfit so tragically performed by Natural Selection?

Mendelism is not so wasteful as the methods of natural selection, some will say. Possibly. And is less fatalistic. I think so also. But why assume at all this servile attitude of powerlessness? The leading French pathologists are Lamarckians, and the prominent Americans are Pragmatists; why should we not adopt what was best in the teaching of Herbert Spencer, and boldly claim the power to influence if not to control our higher destinies?

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